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Climate Refugees: The Climate Crisis and Rights Denied

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Climate Refugees

The Climate Crisis and Rights Denied

RESEARCH REPORT

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The icons on the world map are a representation of simplified and selected data points of populations displaced by weather-related climatic events. The data points were derived from a larger data set produced by IDMC (2018).

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The burning of fossil fuels and other sources of greenhouse gas emissions have been transforming the earth's climate and putting the world's most vulnerable communities at risk. Our global dependence on petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence, puts pressure on countries to protect their communities from climate impacts. This a nearly impossible endeavor across the Global South, especially when it comes to island nations threatened by sea-level rise and climate-vulnerable periphery nations that have long been forced into labor-intensive production and extraction of raw materials for the Global North. As the severity and duration of natural disasters are increasing to the point where peoples' homelands around the world are no longer habitable and resettlement may need to be permanent, the nature of climate-induced displacement is changing altogether.

Yet, across international humanitarian law, human rights law, refugee law, and other bodies of law, protections for climate-induced displaced persons forced to cross international borders are limited, piecemeal, and not legally binding. International migration following short-term disasters is only occasionally protected under humanitarian visas and state-specific measures as with the United States' Temporary Protected Status designation, though such protections are often provisional and not legally binding. Likewise, international migration following long-term disasters is not covered unless the provision of support by the local government (or governments) is denied on the basis of race, religion, membership of a particular social group, or political opinion.

This report argues that a comprehensive framework for climate-induced displaced persons forced to cross international borders to be considered "climate refugees" is necessary.

Presently, the refugee paradigm hinges on the actor of "persecution" originating from the territory where the displacement is occurring. Yet the drivers of the climate crisis are not necessarily where one's safety or well-being are most threatened due to the effects of the climate crisis. Thus, this report advances the notion that "persecution" is built into our global dependence on fossil fuels and the global investment patterns behind this dependence, and that this notion of "persecution" needs to serve as the basis for a normative framing of international recognition and protection of those who are displaced as climate refugees. Specifically, this includes persons moving across internationally recognized state borders as a consequence of sudden-onset or slow-onset disasters; and persons permanently leaving states no longer habitable (including "sinking island states") as a consequence of sudden-onset or slow-onset disasters.

BY THE END OF JUNE 2019, THERE WERE

70.8 million

FORCIBLY DISPLACED PEOPLE WORLDWIDE

1 person forcibly displaced every 2 seconds

41.3 million
INTERNALLY DISPLACED PERSONS

25.9 million
REFUGEES

20.4 million
under UNHCR's mandate

5.5 million
Palestinian refugees under UNRWA's mandate

3.5 million
ASYLUM-SEEKERS

28 million

NEW DISPLACED PERSONS IN 2018

17.2 million
DUE TO NATURAL DISASTERS

10.8 million
DUE TO CONFLICT

Executive Summary

CLIMATE-INDUCED DISPLACEMENT describes the phenomenon whereby individuals and communities are forcibly displaced (within or beyond their nation-state boundaries) by short- and long-term natural disasters that are precipitated or exacerbated by the climate crisis. Short-term disasters consist of typhoons, hurricanes, wildfires, and tsunamis, while long-term natural disasters include desertification, deforestation, rising temperatures, and rising sea levels, among others.

Across international humanitarian law, human rights law, refugee law, and other bodies of law, protections for climate-induced displaced persons forced to cross international borders are limited, piecemeal, and not legally binding. International migration following short-term disasters is only occasionally protected under humanitarian visas and state-specific measures, such as with the United States' Temporary Protected Status designation, though such protections are often provisional and not legally binding. Likewise, international migration following long-term disasters is not covered unless the provision of support by the local government (or governments) is denied on the basis of race, religion, membership of a particular social group, or political leaning.

At the same time, the nature of climate-induced migration is changing altogether. For example, the severity and duration of natural disasters are increasing to the point where peoples' homelands are no longer habitable, and resettlement may need to be permanent.

In order to aid efforts to develop an international refugee protection regime that includes protections for "climate refugees"—either in the form of a new convention or a revision to the existing 1951 Convention and Protocol Relating to the Status of Refugees (Refugee Convention)—this report targets a key condition for refugee status: "persecution." Presently, the refugee paradigm hinges on the actor of persecution originating from the territory where the displacement is occurring. As the climate crisis intensifies, however, the paradigm gets complicated, as the drivers of the climate crisis—including methane released from landfills, natural gas and petroleum industries, agriculture and livestock, and deforestation—are not necessarily where one's safety or well-being are most threatened due to the effects of the climate crisis. Thus, required is a new understanding of "persecution" that could account for the severe nature of the climate crisis and climate-induced displacement, and serve as the basis for a normative framing of "climate refugee" protection.

This report advances a new deterritorialized understanding of "persecution" under the climate crisis, which accounts for the ability of one to survive and avail themselves of a sufficient degree of protection within their country of origin. It does so while recognizing that the "actors" of persecution and the respective climate crisis impacts are fundamentally indeterminable. While the climate crisis is a result of a number of factors, this report focuses on the "persecution" that is built into our global dependence on petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence. In short: "petro-persecution."

This report makes four recommendations:

1. Either creating a new refugee convention, the Convention Relating to the Status of Climate Refugees, or amending the 1951 Refugee Convention. Regardless of the pathway forward, the agreement must satisfy two major requirements: (a) it must qualify individuals and communities that cannot avail themselves of government relief from the effects of the climate crisis as those who are "persecuted" and thus allowed to formally make a claim for asylum in a country of their choosing; and (b) it must do so without the need to identify a specific polluter or industrial process as the source of such "persecution."

2. Linking scientific research on habitability and climate-induced displacement under the Warsaw International Mechanism for Loss and Damage with national resettlement plans.

3. Strengthening the links between the Warsaw International Mechanism and the Task Force on Displacement by identifying climate-induced displacement as loss and damages and thus serve as a basis for liability and/or compensation.

4. Establishing two international insurance pools: (a) one to compensate nations for damages from climate crisis-induced short- and long-term natural disasters (including climate-induced displacement); and (b) one to compensate host nations that resettle climate refugees, with higher premiums for nations with greater historical responsibility for emissions and the destruction of carbon sinks.

Glossary of Terms

Climate crisis vs. climate change

This report favors the term "climate crisis" over "climate change" to emphasize the urgent and extreme nature and impacts of the dramatic increase of Earth's temperature as a result of human activity. Climate change is still used in some parts of the report depending on context. Although the Earth's climate has changed throughout history, the current warming trend is of particular significance because most of it is extremely likely (greater than 95 percent probability) to be the result of human activity since the mid-twentieth century and proceeding at a rate that is unprecedented over decades to millennia.[1]

Climate refugee

This report defines climate refugees as individuals who are forcibly displaced (within or beyond their nation-state boundaries) by short- and long-term natural disasters and environmental degradation precipitated or exacerbated by the climate crisis. Such short-term disasters consist of typhoons, hurricanes, wildfires, and tsunamis, while long-term environmental changes include desertification, deforestation, rising temperatures, and rising sea levels, among others.

Climate refugee vs. environmental refugee

While the terms "climate refugee" and "environmental refugee" have been used interchangeably, this report utilizes the term "climate refugee" to draw attention to the social, economic, and political forces that contribute to and exacerbate global warming, and that govern the movement and resettlement of displaced persons.

Climate refugee vs. climate migrant

Refugees and migrants are entitled to the same universal human rights and fundamental freedoms, which must be respected, protected, and fulfilled at all times. However, migrants and refugees are distinct groups governed by separate legal frameworks. Only refugees are entitled to the specific international protection as defined by international refugee law. Our working definition of "climate refugee" uses the latter term to not only account for climate-induced migration—and the political nature of the climate crisis itself—but to also make the case that such migrants need to be protected under a comprehensive and legally binding framework (whether by revising the 1951 Refugee Convention or developing an altogether new framework).

Disasters and the climate crisis

Adverse weather and biogeophysical events—whether short-term or long-term—become disasters when the event occurs in an area with vulnerable populations and either exacerbates, or is a leading cause of, human, economic, material, societal, and environmental loss. Disasters under the climate crisis are hardly "natural," given that such events are precipitated or exacerbated by humans, and given that the disproportionate vulnerability to such events and their impact is in part a result of the current international political and economic system.

Environmental change	Change or disturbances in the environment are most often caused by human influences and natural ecological processes. Environmental changes can include any number of things, including natural disasters, human interferences, or animal interaction.
Environmental degradation	The deterioration of the environment through depletion of resources such as air, water, and soil; the destruction of ecosystems; habitat destruction; the extinction of wildlife; and pollution.
Food refugee	An individual or community forcibly displaced due to growing food insecurity caused by foreign military intervention, armed conflict, political and civil unrest, and/or environmental challenges, as well as circumstances perpetuated by land grabs, seed monopolies, natural resource grabs, global warming, the increased commodification of food, and structures and arrangements of international free trade agreements.
Food refugee vs. climate refugee	Food insecurity is one of the consequences of short- and long-term natural disasters precipitated or exacerbated by the climate crisis. At the same time, the current international political and economic system would continue to create food refugees in the world even if it were not experiencing a climate crisis. To better account for how food insecurity can be the proximate cause of mass displacement through interaction with a host of other dynamics, including the climate crisis, this report asserts that "food refugees" need to be recognized and protected as a distinct category—neither subsumed within the category of "climate refugees" nor entirely analogous to it.
Petro-persecution	A new deterritorialized understanding of "persecution" under the climate crisis, which accounts for the ability of one to survive and avail themselves of a sufficient degree of protection within their country of origin. It does so while recognizing that the "actors" of persecution and the respective climate crisis impacts are fundamentally indeterminable. Although the climate has entered crisis mode due to a number of sources, the term highlights the "persecution" that is built into our global dependence on petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence.

Introduction

THE WORLD HAS BEEN witnessing the largest waves of forced migration (within and beyond national boundaries) seen in nearly a century. In 2015, an influx of people seeking asylum—largely from Africa, the Middle East, and South Asia—made the journey to Europe by way of the Aegean Sea, the Mediterranean Sea, and Southeast Europe.[2] In the United States, recent attention has been directed toward the flow of unauthorized immigration at its southern border, where the number of migrants from Mexico, Central America, and South America seeking protection has risen steeply.[3]

Media attention has generally focused on Europe, the United States, Canada, Australia, and other parts of the Global North opening or closing their borders to these and other asylum seekers from across the Global South—from Africa, Asia, South and Central America, and island nations across the Indian and Pacific oceans. Yet far less attention has been paid to the proximate and structural causes of such displacement, including war and armed conflicts, political instability, extreme inequality and austerity measures, and land dispossession.

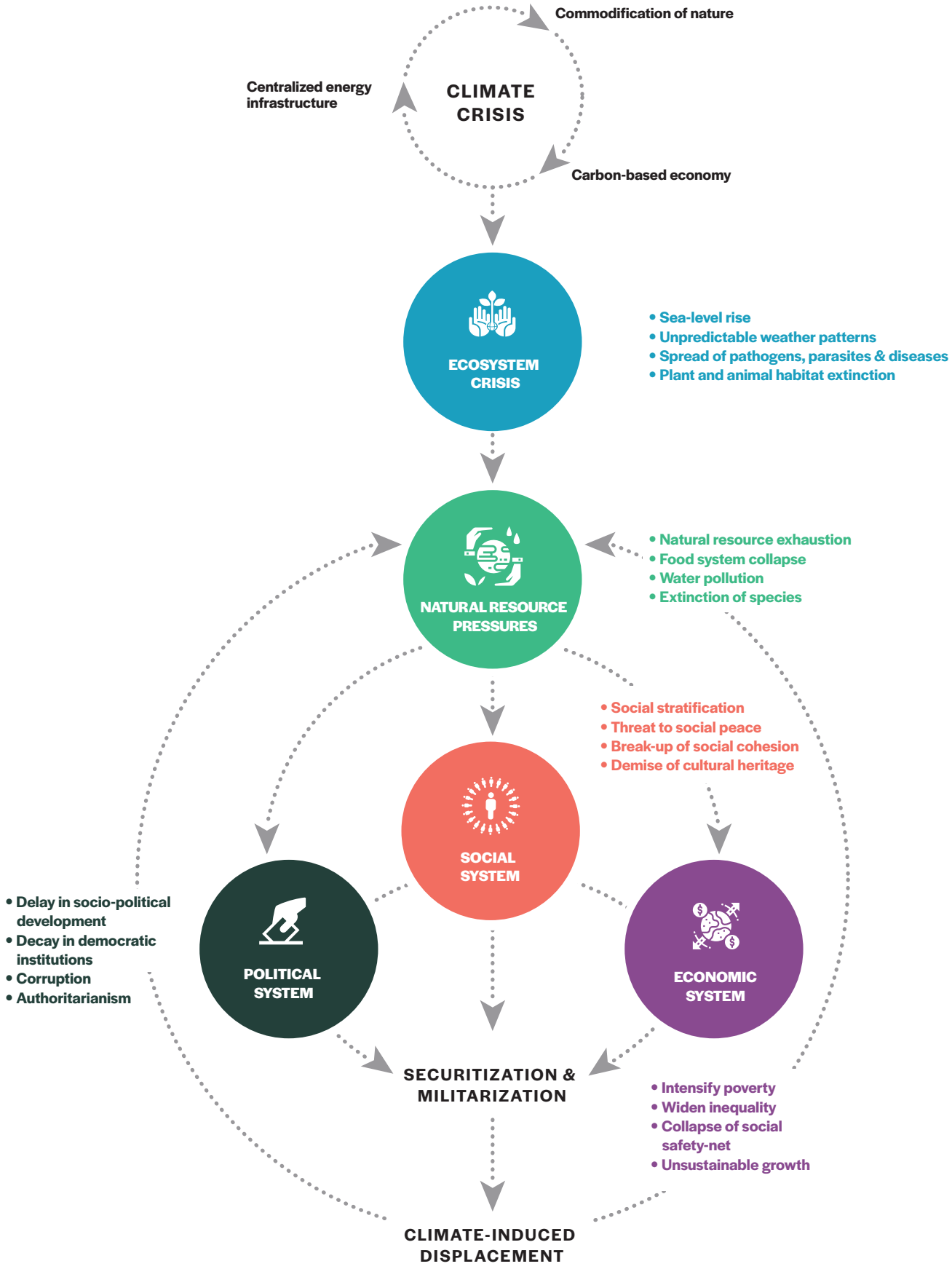
Nearly absent within the mainstream public discourse is recognition and coverage of the role of the climate crisis in driving and exacerbating mass movements of people via short-term and long-term natural disasters. Estimates of the extent of climate-induced global migration vary significantly, but the numbers remain alarming. According to the Norwegian Refugee Council's Internal Displacement Monitoring Centre (IDMC), there were 28 million internally displaced persons (displaced persons who remain within the affected state) in 2018 due to conflict, violence, and disasters.[4] Weather-related hazards triggered the vast majority of the new displacements (17.2 million), with storms and tropical cyclones accounting for 9.3 million displacements and floods accounting for 5.4 million displacements.[5] According to the IDMC, over 253.7 million people have been displaced by natural disasters from 2008 to 2018, with such disasters displacing three to 10 times more people than conflict and war worldwide.[6]

Although the number of climate-induced displaced persons across national borders is much harder to identify, international and intranational climate-induced displacement is projected to increase due to more frequent and intense weather events and long-term environmental changes such as land loss due to sea-level rise and desertification.[7] The landslides that ravaged Sierra Leone and the hurricane season that devastated the United States and the Caribbean in 2017, and the severe drought in Afghanistan and flooding in the Philippines in 2018 have given us a glimpse of this future.

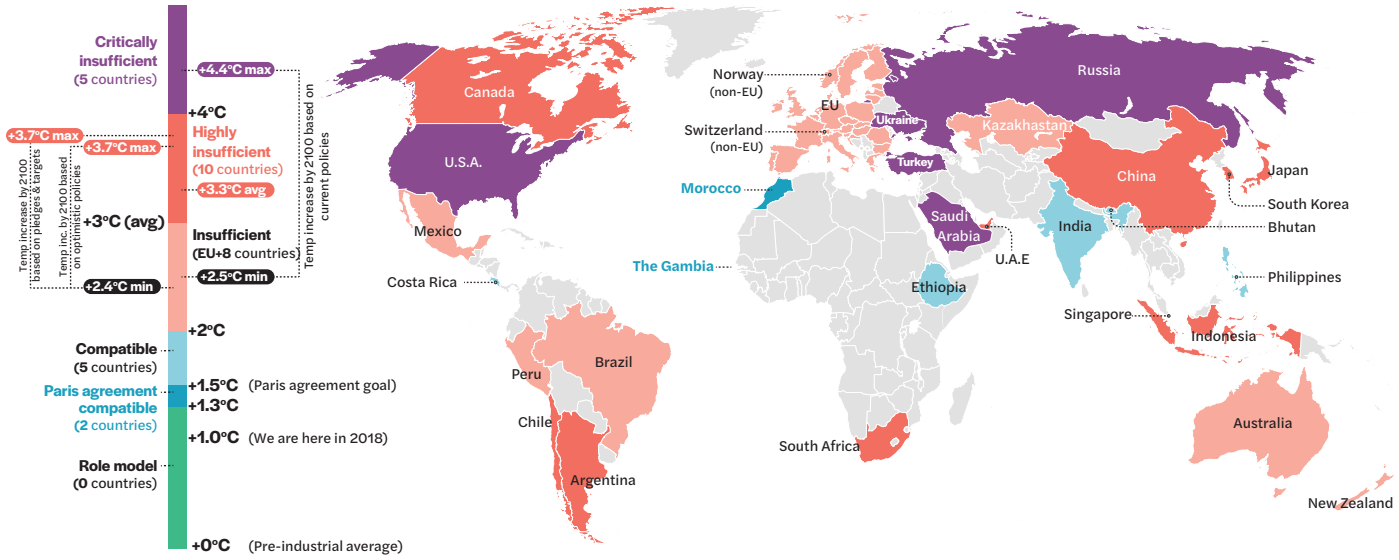
Although the number of people fleeing their homes due to environmental changes grows, these "climate refugees"—a still contested term—continue to be denied international refugee status and afforded adequate protections within their country of origin. Even for those people who are in agreement that climate-induced displaced persons are in dire need of protections, the reasons are manifold: climate migration is mainly internal; isolating environment/climatic reasons is difficult especially vis-à-vis humanitarian, political, social, conflict, or economic reasons; opening the 1951 Refugee Convention may be politically unfeasible and it weakens existing refugee status; and other humanitarian avenues may be available.[8]

Thus, across international humanitarian law, human rights law, refugee law, and other bodies of law, protections for climate-induced displaced persons forced to cross international borders are limited, piecemeal, and not legally binding. International migration following short-term disasters is only occasionally protected under humanitarian visas and state-specific measures as with the United States' Temporary Protected Status designation, though such protections are often provisional and not legally binding. Likewise, international migration following long-term disasters is not covered unless the provision of support by the local government (or governments) is denied on the basis of race, religion, membership of a particular social group, or political opinion. At the same time, the nature of climate-induced migration is changing altogether. The severity and duration of natural disasters are increasing to the point

Multicausality of Climate-Induced Displacement



Global temperature increase by 2100 and country rating in 2018



Source: Climate Action Tracker

where peoples' homelands around the world are no longer habitable and resettlement may need to be permanent.

This report argues that a comprehensive legal framework for climate-induced displaced persons forced to cross international borders—"climate refugees"—is necessary. This report also argues that such a framework need be applicable to two specific situations:

- persons moving across internationally recognized state borders as a consequence of sudden-onset or slow-onset disasters; and
- persons permanently leaving states no longer habitable (including "sinking island states") as a consequence of sudden-onset or slow-onset disasters.[9]

In order to aid efforts to develop an international refugee protection regime that includes protections for climate refugees—be it a new convention or a revision to the existing 1951 Refugee Convention—this report recounts the proximate causes of climate-induced displacement and the added population pressures that follow such displacement. This report then elaborates on gaps in the current protection regime for climate-induced cross-border migration and discusses legal debates around the term "climate refugee" in light of such gaps.

Toward such ends, this report then targets a key condition for refugee status: "persecution." **Presently, the refugee paradigm hinges on the "actor" of persecution originating from the territory where the displacement is occurring.** As the climate crisis intensifies, however, the paradigm gets complicated, as the drivers of the climate crisis—including methane released from landfills, natural gas and petroleum industries, agriculture and livestock, and deforestation—are not necessarily where one's safety or well-being are most threatened due to the effects of the climate crisis. Thus, required is a new understanding of "persecution" that could account for the severe nature of the climate crisis and climate-induced displacement, and serve as the basis for a normative framing of climate refugee protection.

This report advances a new deterritorialized understanding of "persecution" under the climate crisis, which accounts for the ability of one to survive and avail themselves of a sufficient degree of protection within their country of origin. It does so while recognizing that the "actors" of persecution and the respective climate crisis impacts are fundamentally indeterminable. Although the climate is changing due to a number of sources, this report focuses on the "persecution" that is built into our global dependence on petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence. In short: "petro-persecution." This analysis guides the report's recommendations on the ways in which legal scholars, policy-makers, researchers, and others can fashion a comprehensive protection regime for climate refugees.

Spotlight
Tuvalu

The climate crisis is the single greatest threat facing Tuvalu.[10] Located in the southwest Pacific Ocean, Tuvalu is one of the world's smallest and most isolated island nations, consisting of nine inhabited atolls and reef islands. Multiple factors influence the existential threat posed by the climate crisis in Tuvalu such as sea-level rise, recurrent severe tropical cyclones, and increasing rainfall. Although many Tuvaluans are forced to migrate, none are afforded international protections or rights under the 1951 Refugee Convention, as is exemplified in a 2014 New Zealand case, where a Tuvalu family fought to obtain refugee status based on climate crisis impacts but was denied.[11]

Tuvalu's mean elevation is 2 meters above sea level, leaving the island nation especially vulnerable to the projected sea-level increase of 5 to 15 centimeters by 2030 and 20 to 60 centimeters by 2090.[12] Like other Pacific island nations, this sea-level rise threatens to wipe Tuvalu off the map entirely,[13] but not before mass flooding, coastal erosion, inundations, and groundwater salinization.[14] Moreover, as a result of its geographical location, Tuvalu is highly exposed to tropical cyclones that, according to global climate models, will become more recurrent and severe in the future.[15] The rise in frequent and intense rainfall will have catastrophic effects on the island's resources, food, land, and people.[16] These climate crisis factors have implications for Tuvalu's water and food security, and will increase sustained internal and external displacement, pushing people to leave their homes and land as climate refugees.

For Tuvalu, availability of water resources is a constant challenge that is exacerbated by the climate crisis.[17] With no surface water, Tuvalu depends completely on rainwater[18] and is thus acutely vulnerable to shifts in rainfall patterns, sea-level rise, and other extreme weather events.[19] In October 2011, Tuvalu experienced one of its worst droughts, which turned into a declared state of emergency in which household water consumption was limited to 20 liters a day.[20] Moreover, with a small economy relying primarily on fishing and semi-subsistence farming, Tuvalu's food security is highly vulnerable to changes in climate.[21] Increasing sea-surface temperature and ocean acidification are already negatively affecting reef fisheries on the island,[22] and rising sea levels in combination with saltwater intrusion prevent farmers from cultivating staple crops such as pulaka.[23]

Because of these and other factors, the climate crisis has, and will continue, to be a driver of displacement within and from the island nation. For example, after tropical cyclone Pam hit Tuvalu in March 2015, storm waves destroyed homes, crops, and livelihoods, and internally displaced an estimated 5,400 people—45 percent of the total population.[24] Yet, as the climate crisis and its effects become more pronounced,[25] only a quarter of households will have the financial means to relocate.[26] Even if mass relocation were safe and feasible, Tuvaluan officials have articulated just how damaging the process would be, stating that "to get a property and relocate would be to lose our sovereign right and our identity....You cannot make another Tuvalu."[27] With personal and national identity tied to the land, Tuvaluans, when forced to leave the island due to the climate crisis, face an invaluable loss of knowledge around land management, and a loss of tradition and culture among the island's youth.[28] It is estimated that migration within Tuvalu will increase by 70 percent, and international migration will double by 2055.[29]

The Tuvaluan government has enacted several programs and initiatives in response to the climate crisis. Most recently, they created Te Kakeega III: National Strategy for Sustainable Development 2016–2020 (TK III). The strategic agenda aims to reclaim the coastline from erosion, cyclones, and storm surges; establish sea defenses on all islands; [30] and grow the Tuvalu Survival Fund.[31] Since releasing TK III, Tuvalu has also signed and ratified the 2015 Paris Agreement. Despite these attempts by the Tuvaluan government, these efforts cannot succeed in preventing the effects of the climate crisis on their island without concerted efforts by the international community.

Background and Context

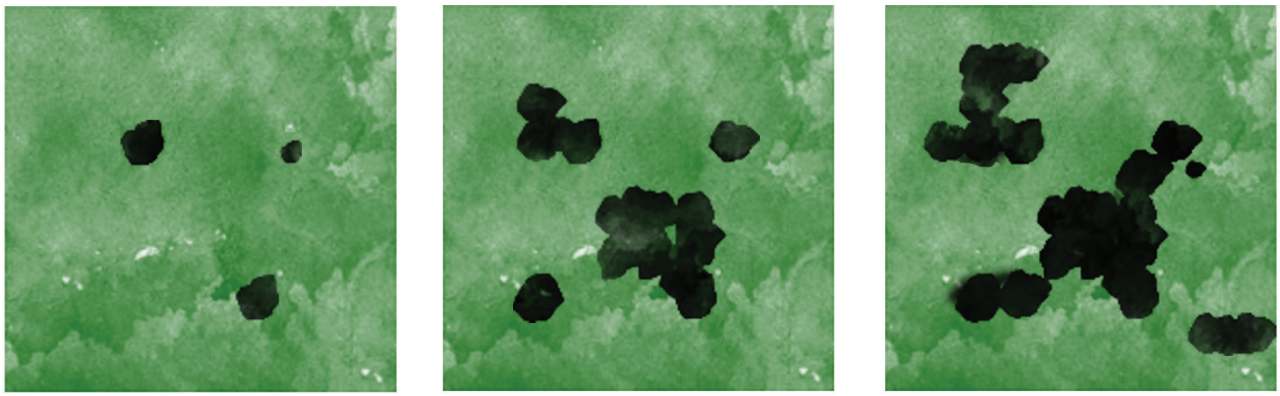
Climate-induced displacement describes the phenomenon whereby individuals and communities are forcibly displaced (within or beyond their nation-state boundaries) by short- and long-term natural disasters that are precipitated or exacerbated by the climate crisis. Such short-term disasters consist of typhoons, hurricanes, wildfires, and tsunamis, while long-term natural disasters include desertification, rising temperatures, and rising sea levels, among others. This section focuses on two of the latter phenomena—sea-level rise and changes to the hydrologic cycle—as well as the added pressures that resettlement itself places on communities and natural resources.

Three Drivers of Climate Forced Displacement

Lake Chad Shrinking

1963 **1973** **2017**

Brazilian Amazon Rainforest Deforestation



1970 - 2.4% **1995** - 12.0% **2018** - 19.3%

Bangladesh Sea-Level Rise

+ 0 m rise

+ 1 m rise
Projected 15 million displaced

+ 1.5 m rise
Projected 18 million displaced

Proximate Causes of Climate-Induced Displacement

Sea-Level Rise

Human activities over the past century have caused Earth's surface temperature to increase, precipitating the melting of glaciers and polar ice caps.[32] Due to this ice melt, sea levels worldwide are rising at an annual rate of 0.13 inches (3.2 millimeters) a year, roughly twice the average speed of the past 80 years.[33] Further, there is a growing consensus that Earth's polar ice caps are less stable than previous estimations suggested and that this rate would increase. In its 2013 report, the Intergovernmental Panel on Climate Change estimated that Antarctica melting would contribute just a few centimeters to sea-level rise by 2100.[34] Yet it is now believed that continued growth in greenhouse gas emissions over the next several decades could trigger an unstoppable collapse of Antarctica's ice—raising sea levels by more than a meter by 2100 and more than 15 meters by 2500.[35]

Sea levels are rising as coastal populations continue to grow. Approximately 38 percent of the world's population lives in coastal areas, and over the past three decades, coastal populations have increased globally from 1.6 billion to over 2.5 billion.[36] The vast majority of these populations are already vulnerable, with over three-quarters (1.9 billion) living in the Global South as of 2007, and with only 15 nations—largely in South Asia, East Asia and the Pacific, and sub-Saharan Africa—containing over 90 percent of the world's low-elevation coastal zone[37] rural poor.[38]

The risk that sea-level rise poses to such communities is threefold: First, rising sea levels mean that small islands and coastal states must grapple with the possibility of partial or complete submersion. Bangladesh, for example, is projected to lose 17 percent of its total land by 2050, which would displace an estimated 20 million people.[39] In addition, the Maldives, at its highest point, is just 8 feet (2.4 meters) above sea level and could lose the entirety of its 1,200 islands as sea levels rise.[40]

Second, when sea levels rise, even a small increase can have devastating effects on the coastal ecosystems on which such populations depend. Across the globe, people whose livelihoods depend on fisheries are experiencing a decline in revenue and profits as melting polar ice caps harm saltwater ecosystems by increasing the amount of fresh water, which in turn drives saltwater marine life away and harms ocean ecosystems.

The third risk that sea-level rise poses to such communities is the increase in coastal hazards driven by the disappearance of ecosystems. For example, coral reefs protect coastal areas, yet if ocean water temperatures continue to rise, it is projected that by 2050 the ocean will be too warm for coral reefs to survive.[41] Salt marshes also protect shorelines from erosion by buffering wave action and trapping sediments, in addition to reducing flooding by slowing and absorbing rainwater, and protecting water quality by filtering runoff and metabolizing excess nutrients. Yet, sea levels are rising and oceans are warming at a rate faster than what many marshes can adapt to on their own. Further accelerating sea-level rise has been associated with saline intrusion, destructive erosion, flooding of wetlands, contamination of aquifers and agricultural soils, and lost habitat for fish, birds, and plants.[42] Likewise, barrier islands and sand formations protect coastal areas yet both can be washed away by intense weather events.

Many residents of coastal regions and islands at risk of submersion and other hazards associated with the climate crisis are already migrating to other regions or to nearby countries as their livelihoods become ever more precarious. For instance, between 2005 and 2015, 15 percent (1,500 people) of Tuvalu's total population had migrated internationally, with many residents having left Tuvalu for New Zealand in search of work under a labor migration program.[43]

Hydrologic Cycle

The steady rise of global temperatures has directly affected the "hydrologic cycle," including water vapor concentrations, clouds, precipitation patterns, and stream flow patterns, with such variations possibly affecting the global sea level if the net freshwater content of the ocean is altered. While coastal populations face sea-level rise, inland communities—especially within

Sea-Level Rise and Forced Migration

Bangkok, Thailand

Thailand is 5 feet above sea level and is sinking at a rate of 0.8 inches every year. A 2015 report from Thailand's National Reform Council estimates that the city could be completely submerged by 2100 due to sinking land and rising sea levels, which would cause the displacement of 14 million residents.[51]

Jakarta, Indonesia

According to a report by Indonesia's Ministry of Marine Affairs and Fisheries, approximately 24 islands have been lost to sea-level rise between 2005 and 2007.[52] In Jakarta, a city of 10 million people, a combination of unchecked groundwater extraction and rising sea levels is causing the city to sink between 2.9 and 6.7 inches a year.[53] In 2015, the city started to phase a 30- to 40-year plan to build the Garuda Seawall shielding the city.[54]

London, England

Melting polar ice sheets and mountain glaciers could increase sea levels significantly over the coming decades, leading to a 1 in 20 chance that the Thames Barrier (in London) would be unable to cope with an extreme storm surge.[55]

Maldives, Indian Ocean

In midlevel global warming scenarios, the Maldives will likely experience a sea-level rise of around half a meter by about 2100, swallowing up to 77 percent of its land area. If the sea levels rise by 1 meter [or 39.37 inches], the Maldives could be almost completely inundated by 2085.[56]

Manhattan, United States

Average sea levels have risen about 1.2 inches per decade in the city since 1900. This is almost twice the average global rate of 0.5 to 0.7 inches per decade. Sea levels around New York City will rise 11 to 21 inches by the middle of the century, 18 to 39 inches by the 2080s, and up to 6 feet by 2100.[57]

Mumbai, India

The United Nations shows that by 2050, 40 million Indians (primarily within the major cities of Mumbai and Kolkata) will be adversely affected by rising sea levels. Projections indicate that coastal storms and flooding will become more severe.[58]

Shanghai, China

Climate Central estimates that 76 percent of the Shanghai region's current population lives in areas that would eventually be underwater if the earth warms by 4°C by 2100.[59]

Tuvalu, Pacific Ocean

A UN report shows that current projections of sea-level rise would inundate Tuvalu by the end of the twenty-first century, causing it to be among the first nations in modern history to drown.[60] According to a report sponsored by the Australian government, sea levels have been increasing by 5 millimeters per year since 1993, a significant increase for the island state that lays a mere 2 meters above sea level.[61] Hence, some researchers predict that Tuvalu's islands will be completely immersed by 2100.[62]

Spotlight
Afghanistan

Afghanistan has endured four decades of uninterrupted war. The US invasion of Afghanistan of 2001, which marked the beginning of the "War on Terror," is the longest war in US history. As a result of continuous warfare and instability, Afghanistan is one of the top three refugee-producing countries in the world, accounting for 2.7 million refugees.[63] Millions more have been internally displaced by violence and climate crisis impacts.[64] However, due to long-standing political, economic, and social devastation and disarray, efforts to prevent precarious environmental effects and degradation are at a nascent stage in Afghanistan.[65]

In 2018, 435,000 people were displaced in Afghanistan due to disasters, surpassing the total number of people displaced by conflict and violence, estimated at 372,000.[66] In the same year, a severe drought affected two-thirds of Afghanistan[67] and forcibly displaced 371,000 people, predominantly impacting those dependent on agriculture and livestock-related livelihoods.[68] Nineteen informal settlements were set up to accommodate IDPs, but unsafe conditions in the settlements continue to pose health and protection risks, and many more IDPs are forced to seek temporary shelter in precarious living spaces and conditions.[69] The frequency and severity of droughts are expected to increase,[70] severely affecting surface and groundwater resources, which are already stressed by water mismanagement and changing climate conditions.[71]

Desertification is yet another effect of the climate crisis impacting Afghanistan—one being exacerbated by deforestation,[72] overgrazing, and the switch to rain-fed wheat cultivation, all of which accelerate soil and land degradation.[73]

Aside from drought and desertification, over the last decade farmers have noted a link between rising temperatures and the unpredictability of rainfall patterns.[74] Likewise, increased temperatures could impact crop variety and lead to varying outbreaks of pests and diseases.[75] For the 85 percent of Afghanistan's population that relies on agricultural and food production as a means of subsistence, these changes are of great concern.[76] Further, warmer temperatures will melt snow and ice and ultimately alter seasonal precipitation patterns and, combined with a lack of vegetation (resulting from deforestation, which helps to stabilize water flow), will increase the risk of flooding throughout the country.[77] Additionally, temperature variations may reduce the risk of avalanches in some parts of the country but will simultaneously exacerbate snowfall and the risk of avalanches in others.[78] Less dire predictions project that Afghanistan will warm 1.5°C by 2050, with additional warming of 2.5°C by 2100.[79]

Recurring environmental disasters have hindered people's resilience and ability to cope with the climate crisis, and in 2019, 10 million people were reported as being food insecure and in need of humanitarian aid as a result of extreme drought and flooding.[80] Future projections indicate that 59,001 people will be displaced due to flooding, and 78,153 people will be displaced due to earthquake-related disasters.[81] However, obtaining accurate projections of the far-reaching effects of climate and environmental changes is a challenge, as there is a lack of robust data accounting for climate impacts in Afghanistan.[82]

With around 3,000 endemic plants—nearly four times that of Europe—Afghanistan is recognized as one of the most biodiverse countries on the planet.[83] Since 2002, the UN Environment Programme has supported the Government of Afghanistan's environmental conservation efforts. It has engaged with Afghanistan's National Environmental Protection Agency (NEPA) to increase advocacy and outreach for the protection and conservation of the environment and the country's natural resources.[84] By 2004, the NEPA enacted several initiatives to protect the environment and to mitigate the climate crisis. These included the establishment of four national parks,[85] as well as amendments to the country's environmental laws.

Critically, the constitution itself holds Afghan people accountable to "protect the environment, conserve the environment, and to hand it over to the next generation in the most pristine condition possible."[86] In 2017, with support from the UN Development Programme and the Least Developed Countries Fund, Afghanistan launched a $71 million initiative to build the resilience of rural communities against climate crisis impacts.[87] Afghanistan completed its National Adaptation Programme of Action for Climate Change in 2009[88] and signed and ratified the Paris Agreement in 2016.

Spotlight
Yemen

Yemen, located on the Arabian Peninsula, has a predominantly arid climate. The country is already struggling with the irreparable impacts of the climate crisis that are contributing to increased drought, flooding, disease outbreaks, pests, changes in rainfall, and storm severity and frequency, as well as sea-level rise and desertification.[89] These changes are interacting with local social and political dynamics.

Starting in 2015, the country has been embroiled in an armed conflict between the local Houthi militias and the Saudi-led foreign coalition that supports the Yemeni government.[90] The Saudi-led coalition, along with additional support from the Emirati government, has contributed to the tremendous suffering of the Yemeni people and destruction of their country. The protracted armed conflict has contributed to the mass displacement of civilians both inside and outside the country, and 24 million people, an estimated 80 percent of the population, are in need of humanitarian aid and protection.[91]

In conjunction with armed conflict and foreign military intervention, the climate crisis is causing immense displacement and damages. In 2015, 56,000 people were displaced by Cyclones Megh and Chapala, which in the span of two days unleashed the equivalent of five years of rainfall in Hadramaut, Sahbwa, and Socotra governorates of Yemen.[92] The cyclones ravaged the infrastructure of the island of Socotra, considered the "Galapagos of the Indian Ocean," and one-third of the population was displaced amounting to 18,000 people.[93] The Internal Displacement Monitoring Centre estimates that over 14,600 people will be at future risk of displacement due to earthquakes, and that over 11,800 people will be at future risk of displacement due to severe flooding.[94]

With Yemen embroiled in armed conflict, the country is unable to address the consequences of climate crisis-related issues.[95] For example, the water and sanitation infrastructure of the country remain critically underdeveloped. The mismanagement of water resources—whereby roughly 90 percent of the country's groundwater is applied to irrigate agriculture[96]—combined with conflict, the climate crisis-exacerbated droughts, and an increasingly hot and arid climate are driving water insecurity in Yemen.[97] What's more, Yemen is at risk of saltwater intrusion into its aquifers as a result of sea-level rise and the overexploitation of the country's groundwater resources.[98] Threats of rising sea-level are expected to accelerate coastal erosion, endanger marine ecosystems and wetlands, devastate coastal infrastructure, contaminate soil, and forcibly relocate entire communities.[99] With diminishing coastal ecosystems, the fishing industry, and those whose livelihoods depend on fish for survival, will become increasingly vulnerable.[100]

Flooding is the most important and frequent form of natural disasters in Yemen, and the damages inflicted by flooding are predicted to increase over the coming years.[101] Increased rainfall is predicted for some parts in Yemen, which could elevate the intensity and frequency of floods, while other areas of the country are expected to have less rainfall, which will intensify the severity and length of droughts[102] and reduce water flow to replenish the country's already-strained rivers and aquifers.[103]

Desertification is another critical and ongoing climate challenge and is expected to increase annually by 3 to 5 percent, which negatively affects agricultural and food production[104] and the overall availability of arable land.[105] Additionally, heavy sandstorms destroy 20 percent of the country's arable land and contribute to soil erosion and ruin crops.[106] An estimated 20 million Yemenis are food insecure, including 10 million who are suffering from extreme hunger.[107] As rainfall has decreased in recent years, harvests have become shorter, yielding less food, and those living in rural villages who rely on subsistence farming have very little food that can be stored to survive during times of conflict, which has been an incessant reality for Yemenis.[108]

The current armed conflict and foreign military intervention in Yemen is hindering the advancement of any climate relevant projects and initiatives, as the government prioritizes resources to support humanitarian aid efforts.[109] Yemen's National Adaptation Programme of Action (NAPA) of 2009 has identified key opportunities to combat the climate crisis and to develop projects to address adverse climate impacts in vulnerable sectors including water resources, agriculture, and coastal zones.[110] However, resulting from a lack of viable data and political instability, the initiatives outlined in NAPA have not been a priority.[111] Yemen has ratified the UN Convention on Biological Diversity in 2005, the UNFCCC, the Kyoto Protocol, and the Convention to Combat Desertification, yet the government did not establish a National Plan of Action.[112] In 2016, Yemen signed the Paris Agreement but has not ratified the agreement.

impoverished countries and countries that derive a relatively large percentage of their GDP from agriculture—are particularly vulnerable to shifts in the weather patterns. This is the case across much of the Global South. In 2010, about 34 percent of the total rural population of developing countries was classified as extremely poor, and about 80 percent of rural households engaged in farm activities that depend on moderate weather patterns.[44]

For such communities, the risk that a warming climate poses is threefold: Firstly, it would greatly impact weather predictability.[45] For example, as the lower atmosphere becomes warmer, evaporation rates will increase, resulting in an increase in the amount of moisture circulating within it. A consequence of higher water vapor concentrations is the increased frequency of intense precipitation events, mainly over land.[46] These changes would affect a large majority of the world's poor who depend on moderate seasonal changes to predict weather patterns and changes in seasons to produce their food.

Secondly, climate-induced changes in the hydrological cycle would affect the availability of water altogether. In parts of the Northern Hemisphere, an earlier arrival of springlike conditions is leading to earlier peaks in snowmelt and resulting river flows. Consequently, seasons with the highest water demand (typically summer and fall) are being impacted by reduced availability of fresh water. Additionally, warmer temperatures have led to increased drying of the land surface in some regions, and increase the incidence and severity of drought. When rain does arrive, much of the water runs off the hard ground into rivers and streams, and the soil remains dry, resulting in more evaporation from the soil and an increased risk of drought. Such impacts of the climate crisis on the hydrological cycle have been clear. For example, the Palmer Drought Severity Index, which is a measure of soil moisture using precipitation measurements and rough estimates of changes in evaporation, has shown that from 1900 to 2002, the Sahel region of Africa has been experiencing far harsher drought conditions.[47]

Thirdly, climate-induced changes in the hydrological cycle include the phenomenon of desertification, wherein a relatively dry land region becomes arid to the point where bodies of water, vegetation, and wildlife can no longer thrive. Beyond periods of drought, desertification is threatening the livelihood of many communities by completely transforming the ecosystem and diminishing, if not eliminating, the productivity of land. As the land in these regions becomes increasingly arid and uninhabitable, entire communities are being forced to relocate.

Desertification as a driving force of migration has been most notable in communities in East Africa, the Horn of Africa, and the Gobi Desert in China.[48] For example, the Gobi Desert in China has been expanding at an accelerated rate at around 100,000 square miles per year since 1950, and as a result, some 24,000 villages in northern and western China have been abandoned entirely over the last half century.[49] Likewise, severe droughts and civil strife in Somalia have resulted in what the United Nations High Commissioner for Refugees described as an "exodus" of Somalis to Kenya and Ethiopia in 2010 and 2011, and the shrinking of Lake Chad by 90 percent since the 1960s has put pressure on the 20 to 30 million people that depend on it to abandon agriculture, fishing, and livestock as once-viable sources of income.[50]

Spotlight
The Northern Triangle of Central America
Guatemala, Honduras and El Salvador

The Northern Triangle of Central America (NTCA), a region comprising Guatemala, Honduras, and El Salvador, is "ground zero" for global warming's impact in the Americas.[113] Central American migrants, largely asylum seekers, flee their home countries to escape violence, economic instability, and persecution at the hands of their government.[114] These factors are further compounded by the overwhelming effects of the global climate crisis on the region, including drought, floods, increasing temperatures, and rising sea levels. These climate crisis factors have implications for the NTCA's human and social development, and will increase internal and external displacement.

For the large NTCA population that relies on agricultural and food production as a means of subsistence, the effects of the climate crisis are of great concern. From 2014 to 2016, three consecutive El Niño droughts decimated farmers' staple crops throughout the dry corridor—a swath of historically arid land that runs through all three countries.[115] While rainfall is sparse in some areas in the region, in other areas, flooding is expected to increase by 60 percent, decimating crops.[116] Temperatures have risen in Central America by 0.5°C since 1950 and will continue to increase with a projected rise of another 1 to 2 degrees before 2050.[117] Coffee, a key cash crop of the NTCA, is vulnerable to such temperature increases and intense rainy seasons. For example, the 2013 coffee rust fungus led to $1 billion in crop losses and an estimated 100,000 Central Americans to lose their jobs.[118] In El Salvador, sea level is projected to rise 18 centimeters by 2050[119] thus destroying mangrove forests and the marine life that relies on them.[120]

Nearly half (47 percent) of the families in the NTCA region are food insecure, and the climate crisis will exacerbate this issue.[121] The devastating 2014 drought destroyed 63 percent of Guatemala's bean production and 70 percent of Honduras's corn crops, and damaged crop cultivation in 30 percent of El Salvador's farmland.[122] For producers and consumers, agricultural losses due to drought are a leading cause of migration from the Northern Triangle.[123] Likewise, water availability for NTCA countries is projected to decrease by 2100 due to the climate crisis, with all three countries falling below the limit of water stress—an 88 percent decline for Honduras, 82 percent for Guatemala, and 73 percent for El Salvador.[124] For example, the 2014–2015 El Niño amplified the Zika outbreak in Guatemala.[125]

Across the NTCA region, the climate crisis is exacerbating the displacement of people within and across national borders. In Guatemala, there were 27,000 newly displaced people as a result of disasters; in El Salvador, there were 4,700 new displacements triggered by flooding and earthquakes; and in Honduras, there were 17,000 new displacements due to disasters.[126] Projections estimate that in the next 30 years, 3.9 million climate refugees will have to flee Central America due to the climate crisis, with many arriving at the US-Mexico border.[127] At this border, the largest number of asylum seekers (mostly families and unaccompanied minors) come from El Salvador, Honduras, and Guatemala—three countries especially imperiled by the climate crisis.[128]

Despite the dire situation residents of these countries face, the US government, through its zero-tolerance policy of unlawful immigration, separated over 2,600 children from their parents.[129] In April 2019, it was announced that the United States would cut an estimated $700 million in aid to the NTCA in an attempt to deter immigration into the country.[130] The US government, rather than implementing policies and practices that criminalize and dehumanize those forcibly displaced by violent conflict and natural disasters, needs to shape its immigration policy around the root causes of migration today, much of which is fueled by the effects of the intensifying climate crisis.

The NTCA governments have employed several policies to combat the climate crisis, and have signed and ratified the Paris Agreement. El Salvador's National Climate Change Strategy aims to mitigate the crisis by rehabilitating and conserving existing ecosystems, and by transforming agricultural practices with the help of local knowledge.[131] Guatemala's K'atun National Development Plan, Our Guatemala 2032, intends to mitigate the impacts of the climate crisis by promoting efficient use of irrigation water, establishing early warning systems for food insecurity by monitoring agri-food systems based on agrometeorological observation, and expanding protected areas as a strategy of ecosystem conservation.[132] Honduras's National Climate Change Strategy aims to improve the resilience of crops and pastures by incorporating more tolerant crops—preventing the erosion and desertification of soils—and fortify the country's defenses against human diseases worsened by the climate crisis.[133] Despite these attempts by NTCA governments, such efforts cannot succeed in preventing the effects of the climate crisis without concerted and collective efforts by the international community.

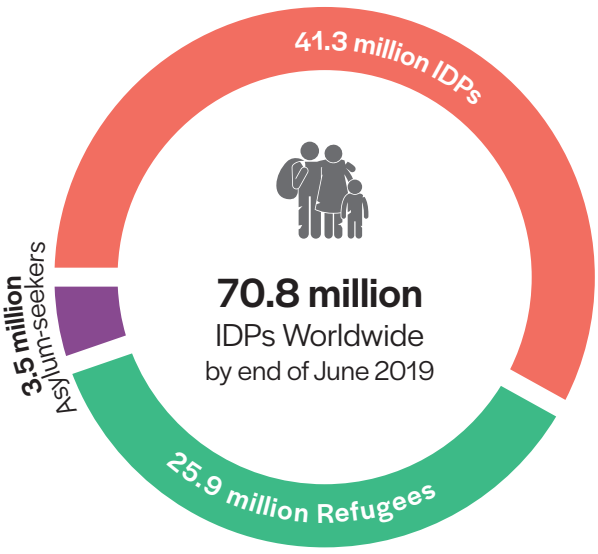
Secondary Outcomes of Climate-Induced Displacement

Joblessness and Resource Competition

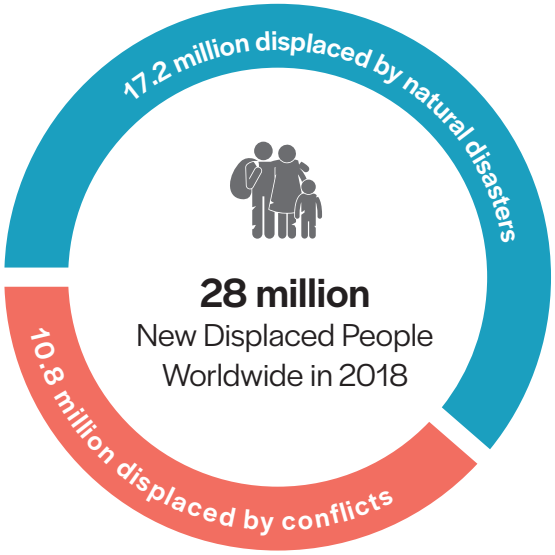
The risks associated with the climate crisis fall hardest on nations within the Global South. The risks come from two directions: First, more so than in the Global North, a relatively large percentage of national GDPs in the Global South are derived from rural environments. Second, such nations have less adequate disaster response and management capabilities, and fewer resources to prevent and mitigate the effects of long-term environmental change.[134] Thus, climate-induced short- and long-term environmental changes will continue to force many within these nations to migrate internationally. Yet, climate-induced migration across national borders is not always an option, and the push to relocate internally presents its own pressures upon already-strained communities and national economies.[135] For example, many climate refugees are rural and coastal residents whose only option has been to relocate internally, oftentimes to urban areas.

These migrants face difficulties familiar to all rural-to-urban migration, including unemployment and poverty, when their rural skills such as herding and farming are far less applicable in urban settings. Further, evidence suggests that internal migration from the climate crisis may itself create more economic and political refugees. The former UN high commissioner for refugees and current UN General Secretary, Antonio Guterres, stated that "climate refugees can exacerbate the competition for resources—water, food, grazing lands—and that competition can trigger conflict."[136] Hence, climate-induced migration can cause population pressures, landlessness, rapid urbanization, and unemployment, which put refugees in danger of resident backlash and worsen existing urban struggles.

Forcibly Displaced People Worldwide



Source: UNHCR, June 2019



Source: IDMC, December 2018

Gaps in the Present Protection Regime

International attention concerning the climate crisis emerged as early as the late-1980s when the Intergovernmental Panel on Climate Change (IPCC) was established to collect and assess evidence on the phenomenon. In 1995, the IPCC's Second Assessment Report not only concluded that the climate was changing, but also that it was changing due to "a discernable human influence." This was among the first times that the link between human activity and global environmental change was officially recognized.[137]

Since then, dialogue surrounding climate change has largely focused upon its impacts on ecosystem health and natural resource management, and increasingly on climate change mitigation and adaptation. Largely overlooked, however, has been the impact of the climate crisis on communities that can no longer remain in place due to short-term and long-term natural disasters. This elision extends to international and intranational protections for climate-induced displaced person. In order to advance a working definition of cross-border climate refugees and build the case for the need for a legally binding and comprehensive international framework necessary for their safe resettlement, this section recounts debates surrounding the term and the normative gaps in legal protections vis-à-vis international and intranational climate-induced displacement.

Lack of Agreed Terminology

Inventing the Terminology

A first gap in the present normative framework to cover those individuals and communities displaced due to the short- and long-term effects of the climate crisis is the lack of an agreed terminology. Efforts to develop such terminology began early on, prior to widespread recognition of climate change itself. In the 1970s, Lester Brown, an environmental activist and founder of the Worldwatch Institute, coined the term "environmental migrant" to describe a broad category of people choosing or forced to migrate due to environmental factors. The first such recognition of the category of migrants, the term was modified and popularized by Essam El-Hinnawi of the UN Environmental Programme, who in 1985 defined "environmental refugees" as:

> "...those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affect the quality of their life. By 'environmental disruption' in this definition is meant any physical, chemical, and/or biological changes in the ecosystem (or the resource base) that render it temporarily or permanently, unsuitable to support human life."[138]

This terminology has been contested by the UN High Commissioner for Refugees, which expressed reservations because of its lack of basis in international refugee law and risk of undermining this legal regime.[139]

The attention that coalesced around migration due to environmental factors allowed for literature and public debates to flourish once climate change was named. In 1990, the IPCC published its First Assessment Report with scientific reports on the causes and effects of climate change, warning the international community of potential environmental and social impacts. In that report, the IPCC warned that "the greatest single impact of climate change could be on human migration" due to displacement caused by environmental catastrophes, such as severe droughts and shoreline erosion.[140] Soon after, in 1992, the International Organization for Migration and the Refugee Policy Group published a report titled "Migration and Environment" warning that the number of global migrants "could rise substantially as larger areas of the earth become uninhabitable as a result of climate change."[141]

While international attention linking climate change and human migration surfaced and expanded in the 1990s, the momentum did not last. This was due in part to disagreements in terminology and, by extension, binding protections and directions for additional research. A 2009 International Organization for Migration report titled "Migration, Environment, and Climate Change on Assessing the Evidence" attributed neglect of the topic to "little consensus over the years among researchers about whether or not environmental migration is a distinct form of migration worthy of special study."[142] The question is valid, as debates have surrounded the limitations of both terms of the expression "environmental migrant."

Regarding the "environment," Kälin and Schrepfer recount that environmental factors are just one reason why people are displaced, with a variety of economic, social, and cultural factors, including the "vulnerabilities of affected communities or the lack of governmental capacity to properly respond to disasters being equally important."[143] Regarding "migrants," Kälin and Schrepfer recount that social scientists use "migration" as a generic term encompassing both voluntary and forced movements, and that international law does not use the term "migrant" in the context of forced movements but refers to "displaced persons" and "refugees."[144] Thus, the term "environmental migrant" obfuscates the causes and nature of such displacement and is unsatisfactory from a legal point of view.

These issues are ongoing even as climate change, which has quickly precipitated into an existential crisis (thus our adoption in this report of the term "climate crisis"), becomes increasingly recognized as a core driver of migration. The case for climate refugees has been made as early as the mid-2000s, when the former

Spotlight
Ethiopia

Ethiopia, located in the Horn of Africa, is home to nearly 105 million people[154] and with a GDP of $84.36 billion.[155] Multiple factors fuel local struggles[156] and drive displacement within the country, including resource-based conflict around land ownership and access,[157] political exploitation along ethnic and cultural differences, the proliferation of arms, and border disputes.[158] Despite positive political change after Prime Minister Abiy Ahmed took office,[159] new displacement figures are at an all-time high. Almost 2.9 million new displacements associated with conflict and violence were recorded in 2018—the highest figure recorded worldwide. Aside from conflict, many Ethiopians are forced to migrate due to the Ethiopian government's plans of regional transformation, particularly in the Lower Omo Valley.[160]

Ethiopia accounts for less than 1 percent of the world's total CO^2 emissions,[161] yet it faces especially intense effects of the climate crisis, including ever-rising temperatures, erratic rainfall distribution, recurrent droughts, floods, and desertification. There is a high degree of uncertainty over rainfall, with projections ranging from a decrease by 25 percent to an increase by 30 percent in the 2050s.[162] For example, the climate crisis will most likely contribute to severe droughts in the desert-like conditions of the northeast, east, and southeast lowlands, and will intensify heavy rainfall events during the two rainy seasons of the humid rainforest in the south and southwest.[163]

Under a high emissions scenario for Ethiopia, the number of days with very heavy precipitation (20 millimeters or more) could double, increasing the risk of floods.[164] Changing temperature and rainfall patterns result in substantial desertification, soil erosion, and loss of diversity, including wildlife.[165] Likewise, these changes have implications for Ethiopia's human and social development, such as water and food accessibility and public health challenges.

Ethiopia's economy is based largely on the agricultural sector, comprising 40 to 50 percent of total GDP and employing 80 to 85 percent of the population. As a result, the country is especially vulnerable to decreasing agricultural productivity due to drought,[166] land degradation,[167] and unsustainable land use.[168] These challenges and continuing conflicts over land and resources lead to numerous displacements every year.[169]

In 2015, Ethiopia suffered one of its worst droughts in 50 years due to the failure of two consecutive rainy seasons.[170] This drought led to increased food insecurity and displaced 280,000 people.[171] Most recently, in 2018, 296,000 new displacements were recorded, similarly associated with drought and flooding.[172] That year, 8.1 million people were identified as food insecure and in need of urgent assistance.[173] Recurrent and severe drought has contributed to conflict among communities over access to water and pasture,[174] particularly as drought pushes certain ethnic groups to migrate into another ethnic group's area, which can lead to tensions.[175]

The climate crisis in Ethiopia will also have devastating impacts on people's health. For example, increasing floods will facilitate larger outbreaks of diseases such as malaria, where estimates predict that by 2070, almost 130 million people will be at risk.[176] Similarly, the country will see higher rates of dengue fever and waterborne diseases, like cholera and dysentery, as well as respiratory diseases associated with droughts.[177]

Ethiopia has already put in place a number of strategies and policies to adapt to the climate crisis, such as signing and ratifying the Paris Agreement and implementing the Climate Resilient Green Economy Strategy[178] and the second Growth and Transformation Plan.[179] Most recently, the Government of Ethiopia created the National Adaptation Plan: Ethiopia's Climate Resilient Green Economy, which aims to enhance food security through selecting resistant and tolerant crop and livestock to increase agricultural productivity, improve integrated health and environmental protocols, and increase access to potable water.[180]

Despite these attempts by the Ethiopian government, such efforts cannot succeed in preventing the effects of the climate crisis on the most marginalized communities. Particularly, government attention must be directed toward the plight of the Indigenous population in the Lower Om Valley, who are historically marginalized and especially vulnerable to the climate crisis.

Interview
Bertha Isabel Zuniga Cáceres

General Coordinator of COPINH, the National Council of Popular and Indigenous Organizations of Honduras, Honduras

In the context of the global climate crisis and responses to global climate change—including the investments in renewable energy and clean energy—how do you see this tension between Indigenous communities, corporations, and governments taking shape?

I believe the main problem is that the Honduran government and multinational corporations alike conceive and treat energy as a commodity, and as long as they treat energy as merely a lucrative business investment, the rights of Indigenous people will be undermined. The murder of my mother unveiled the vast range of power that multinational corporations (whether fossil or renewable) exert on society and act with impunity.

In Honduras, producing "renewable" energy is becoming one of the most lucrative businesses in the region for the Honduran businessman who has historically exploited the common goods of the country. However, the response to climate change has to be paired with respect for human rights. Under the logic of excessive consumption, there will never be enough to satisfy the desire to produce energy that we do not need but that is produced to deepen the dispossession of many people. The government is aligning its policies to the interests of the corporations, creating conflict with and violating Indigenous and peasant communities' rights that, at the end, are set aside.

We know the US government has had a role in Honduran politics for the entirety of the modern history of Central America, including in the 2009 coup, and has fostered issues of extreme poverty and Indigenous dispossession. How might this relationship between the United States and Honduran/Central American/Latin American politics be understood in the context of the climate crisis and climate-driven displacement?

The United States as a global economic power knows that fossil fuels are in crisis and will be depleted sooner or later. The market cannot be subjected to think a panorama of agony as to the end of fossil fuels. What we, the Indigenous and Central American people, are experiencing is the transition of the energy market that is looking for alternative ways to sustain itself. The United States directs a significant part of the budget for Honduras to "security assistance" and "combating drug trafficking," which translates into the presence of security forces in the communities that are resisting energy-generating projects. The greatest beneficiary of the free market policies promoted by the United States toward Honduras and Central America is the United States, which cannot survive without the control it has over its adjacent region. The US supremacy in the economic dispute of the world powers has to do with the effective control of the economy and territory of its areas of influence in Latin America and the Caribbean, where it maintains control under a discourse of democracy.

Honduras is part of a logistical corridor that moves goods, raw materials, and drugs to the United States but in which human movement is restricted. Ignoring the impact of climate change and focusing on market-based solutions is hypocritical. These policies, such as relaxing environmental regulations to attract foreign investments, perpetuate dependency and exacerbate the climate crisis, which is generated by excessive production and consumption. These policies affect many communities by forcing them to adapt to precarious conditions and leaving them vulnerable and stripped of control of their territorial sovereignty.

Forced migration has always been a constitutive feature of state and corporate exploitation of natural resources and Indigenous peoples across Honduras, Central America, and Latin America more broadly. How have you seen these dynamics change over time, if they have, and how do you anticipate the climate crisis shaping these dynamics? What experience have "land defenders" had and how do you anticipate that changing in the context of the climate crisis?

Forced displacement has affected urban regions much more than rural ones. What is causing people to

migrate is the implementation of an economic model that gives priority to financial gain over our relationship with the land. Climate change may be a factor that worsens the displacement crisis, but it is not, in my opinion, the structural origin of displacement. The main cause is the lack of autonomy, the lack of control of the territory in which this economic model does not allow for agricultural subsistence activities to be developed in harmony with the land. These dynamics are breaking the social fabric and installing violence in our communities. At COPINH, we have understood that the greater the autonomy and territorial control we have, the more prepared we will be to face any climatic catastrophe. However, dependency has been intensified and autonomy has been lacerated. Consequently, we envision a surge of forced displacement.

UN High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, Anwarul Chowdhury, advocated for an expansion of the legal definition of refugees to include people displaced by the climate crisis, arguing that "the most vulnerable countries affected by the degradation of the environment and had [themselves] advocated for recognition of the resulting refugee situations."[145]

Likewise, the 2018 UN Global Compact for Safe, Orderly, and Regular Migration reaffirmed the New York Declaration for Refugees and Migrants and expanded it to account for migration driven by "natural disasters, the adverse effects of climate change, and environmental degradation"—the first UN compact to recognize the climate crisis as a driver of migration.[146] Yet the compact avoided naming such peoples (whether migrants or refugees), thus avoiding the question of legal protections altogether.

Two Schools of Thought on Climate Refugeehood and International Protections

Since the concepts of "environmental migrant" and "environmental refugee" were first conceived, two schools of thought have guided discussions concerning the relationship between environmental change, the number of disasters causing displacement, and the number of persons affected by such factors: the "maximalist" school and the "minimalist" school.

The maximalist school sees the link between migration and the climate crisis as "causative and direct"—a case supported by findings from the scientific community that continues to generate consensus on the scale and inevitability of environmental change and migration driven by the climate crisis. However, such links have been drawn without a comprehensive account of the social, economic, and political forces that interact with such environmental factors. Conversely, the minimalist school focuses on the complex interaction between environmental and social issues, questioning any supposedly direct causal links between environmental change and migration.[147] The school has focused less on predicting the numbers of current and future persons displaced due to environmental factors, and instead interrogated the relationship between the environment, migration, and refugeehood itself.[148] As a result, the minimalist school has disavowed the terms

Spotlight
Haiti

Haiti is the poorest nation in the Western Hemisphere with a GDP per capita of $870 in 2018.[181] It is also the most vulnerable country in Latin America and the Caribbean region to natural disasters and ranks fourth globally of countries most impacted by extreme weather events from 1998 to 2017.[182] Caribbean climate projections estimate that temperatures could increase from between 0.78°C and 2.16°C by 2050.[183] As a small island developing state, Haiti is subsequently exposed to the threat of increasing average temperature, sea-level rise, recurrent severe tropical hurricanes, and flooding.[184] By 2030, sea levels are expected to increase by 0.13 to 0.4 meters, which would put Haiti at risk of extreme flooding and coastal erosions.[185] Haiti, situated at the center of the hurricane belt, is particularly susceptible to hurricanes, which are projected to intensify by 5 to 10 percent by 2050.[186] With heavy rainfall events combined with concentrated deforestation, flooding is a major issue for Haiti, which will only get worse as the climate crisis intensifies.[187]

Haiti is also exposed to the threat of decreased average rainfall and desertification. The island nation faces a decrease in average annual precipitation of up to 43 millimeters by 2050[188] and an increased likelihood of droughts, resulting in the destruction of crops, decreased agricultural production, and heightened food insecurity.[189] Due to colonial policy[190] and Haiti's history of deforestation, the island's primary forests have declined from 4.4 percent of total land area in 1988 to 0.32 percent in 2016. Such deforestation has exacerbated soil degradation,[191] erosion, flooding, desertification, and scarcity of water resources.[192] With an economy based primarily on agriculture, employing 66 percent of the workforce and contributing to 27 percent of the GDP, Haiti is highly susceptible to the impacts of the climate crisis.[193] Relying heavily on rainfall for farming, Haiti experienced droughts that caused crop losses of more than 50 percent and a significant reduction in food availability resulting in food insecurity for 3.6 million people in 2016.[194]

Natural disasters exacerbated by the climate crisis have precipitated mass casualties and internal and external displacement. Between 1961 and 2012, Haiti experienced more than 180 disasters that led to a massive death toll. These include the deaths of an estimated 220,000 people following an earthquake in 2010—not wreaked by the climate crisis, but worsened by similar factors that interact with more climate-related natural disasters. These also include an estimated 230,000 deaths[195] and the displacement of 175,000 people[196] as a result of Hurricane Matthew in 2016.[197] While evidence documenting displacement is scarce after major disasters, research indicates that people displaced by the 2010 and 2016 disasters still face displacement-related challenges today.[198] Most recently in 2018, approximately 8,800 new displacements were recorded in Haiti primarily related to housing destruction caused by an earthquake in October 2018 in Port-de-Paix.[199]

These climate crisis factors have exacerbated Haiti's already-troubled human and social development, affecting water and food accessibility, and public health. Haiti's water and sanitation infrastructure is one of the most underresourced in the Western Hemisphere.[200] It is estimated that only 64 percent of the population has access to basic or advanced water supplies, and a mere 30 percent has access to basic sanitation.[201] After the devastating 2010 earthquake in Haiti, a UN camp contaminated the Artibonite River with cholera,[202] which led to over 800,000 cases of the disease and 9,000 deaths.[203] Flooding also increases the risk of outbreaks of vector and waterborne diseases, such as dengue fever, malaria, Zika, and cholera.[204]

Combating the climate crisis in Haiti necessitates a multipronged approach. As a full participant in the Paris Agreement,[205] the Haitian government created a 2015–2030 climate plan that aims to shift 47 percent of its electricity generation to renewable sources and grow 137,500 hectares of new forest.[206] Despite these attempts by the government, these measures cannot succeed in preventing the effects of the climate crisis without the meaningful support of the international community as well as local grassroots interventions. New strategies must learn from former pernicious international community involvement, such as the Dominican Republic's mass deportation of Dominicans of Haitian descent and Haitian migrants[207] and the United Nations' disastrous role in the cholera outbreak.[208] Further, the international community must advance strategies for better allocation of funds, [209] such as the International Fund for Agricultural Development's approach that partners with community-based organizations to battle the climate crisis.[210]

"climate refugee" and "environmental migrant," among others.

The tensions between these two schools have materialized in international climate change agreements and negotiations, including those pertaining to migration specifically.[149] Within international climate change assessments and agreements, a shift toward the minimalist perception of environmental migration in the context of the climate crisis has been clear. This is especially true in the context of the IPCC's change in rhetoric in the late 1990s and early 2000s. After the First Assessment Report in 1990, the IPCC demonstrated reluctance to use the term "environmental refugee" altogether, changing their tone from alarming accounts and calls to action to nuanced treatments of environmental change and human migration.[150] Hence in 2001, the IPCC report did not mention the link between climate change and human migration.

The tensions between these two schools have likewise materialized within agreements and negotiations pertaining to international protections for climate refugees. For example, the 2011 Nansen Conference: Climate Change and Displacement in the 21st Century deliberately avoided using the term "climate refugees" or "environmental refugees." One of the key messages from the session "Filing the Gaps in the Protection Regime" was that referring to cross-border movements driven by extreme weather events as "external displacement" supposedly did away with the "legally inaccurate and misleading" terms "climate refugees" and "environmental refugees."[151] In other words, the ostensible infeasibility of a legal framework for "climate refugees" rather than any kind of missing link between the climate crisis and displacement precluded discussion of climate-induced refugeehood altogether. Likewise, the 2018 UN Global Compact for Safe, Orderly, and Regular Migration—the first UN compact to recognize the climate crisis as a driver of migration—avoided the terms.

The international community's opposition to the terms "climate refugees" and "environmental refugees" because of their financial and political implications hinders recognition of the links between the climate crisis and displacement, globally. It also evades discussions of international accountability and avenues toward a legally binding framework for climate-induced displaced persons crossing national borders.[152] Thus, as Kälin and Schrepfer argue, highlighting the maximalist protection perspective without adopting its alarmist stance would allow policies to be shaped on the basis of needs of populations displaced by the climate crisis rather than xenophobic and self-interested limits on resettlement.[153]

Normative Gaps

Cross-Border Displacement

The international community's increasing acknowledgement of the growing problem of climate-induced displacement hits a wall when it comes to legal protections. Debates on how to define this group of persons—as "climate refugees," "climate migrants," or "environmental migrants"—highlights how even within legal scholarship, there is little consensus on the need for legal protections and how they might be afforded. The 1951 Refugee Convention—the principal international framework for refugee protection—has not been amended to incorporate climate-induced migration.[211]

Even people who agree that climate-induced displaced persons are in dire need of protections argue against a framework that grants them refugee status for a number of reasons: climate migration is mainly internal; isolating environment/climatic reasons is difficult especially vis-à-vis humanitarian, political, and social, conflict, or economic reasons; and other humanitarian avenues may be available.[212] Additionally, of major concern is the risk of "opening up" the 1951 Refugee Convention to new restrictions during an especially heated political climate.

Specifically, Nina Birkeland, the Norwegian Refugee Council's Senior Adviser on Disaster Displacement and Climate Change, argues that "climate migrants should [not] be made into climate refugees and be part of the refugee convention" largely because opening up the 1951 Refugee Convention for debate and revision during a time of heightened nationalism and anti-immigrant sentiments might undermine such legal protections altogether.[213] At the same time, she argues, expanding the refugee convention to include climate refugees would create distension as it would be challenging to determine if and how the migration was induced by the climate crisis, thus complicating state obligations that already exist under the 1951 Refugee Convention.

The necessary conditions for refugeehood within the 1951 Refugee Convention and across refugee law presents another key barrier. The definition of "refugees" found in Article 1A(2) of the Refugee Convention contains three key elements concerning those it applies to: 1) a "well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion"; 2) presence "outside the country of [one's] nationality"; and 3) inability or unwillingness to "avail [oneself] of the protection of that country."

People displaced across borders by the short-term and long-term effects of the climate crisis fulfill the second element of having crossed an international border. However, they do not fulfill the principal element of being persecuted, as stated in the Refugee Convention itself, and as understood by legal scholars, policy-makers, and researchers alike—an important barrier given that international protection regimes, from their origins in the wake of World War II and into the present, hinge upon such claims of persecution.

As legal scholars and migration experts argue, the definition of "persecution" itself is in conflict with the nature of climate-induced displacement, thus hindering the possibility of expanding the 1951 Refugee Convention or creating a new convention, the Convention Relating to the Status of Climate Refugees. There are three reasons for this conflict in particular:

1. Scholars argue that qualifying main polluters or even the international community as a persecutor would create substantial difficulties because one would have to establish the causality between their action/inaction and the respective climate crisis impact in each individual case—something that is virtually impossible at the present stage of scientific knowledge.

2. A person fleeing the effects of the climate crisis is not escaping their government or other public and private entities specific to their home state. Rather, they are seeking refuge from a phenomenon born of the actions of entities across a number of states. Thus, scholars argue that qualifying the main contributors to the climate crisis—from methane released from landfills,

Spotlight
Somalia

Somalia, Africa's easternmost country, grapples with the repercussions of nearly three decades of protracted internal conflict and civil war, political instability, and low levels of socioeconomic development.[230] All of these dynamics are exacerbated by the climate crisis.[231] The crisis, in its varying forms and impacts, is felt throughout Somalia by way of drought, desertification, flooding, and water and food insecurity. These climate impacts force many Somalis into new and prolonged, internal as well as external, forms of displacement, including forcing people to leave their homes and land as climate refugees.

By June 2018, 2.6 million Somalis were internally displaced by a combination of conflict and disasters, and over an additional 800,000 were identified as refugees in the neighboring countries of Kenya, Uganda, Ethiopia, Djibouti, Eritrea, and Yemen.[232] In 2017, 892,000 people were displaced by slow-onset disasters including drought, which inflicted the highest number of forced relocations totaling 858,000 people, and 34,000 people displaced due to lack of livelihoods.[233] Additionally, in 2018, 547,000 people were displaced as a result of drought and flooding.[234] Researchers meanwhile believe that due to ongoing conflicts in the Horn of Africa, and the lack of accurate data and systems to track displacement, the reported numbers for displaced persons is likely an underestimate.[235]

Somalia's economy is dependent on agro-pastoral and agricultural systems of production.[236] Stable weather patterns and healthy rainy seasons are crucial for Somalis whose livelihoods depend on the land, particularly in rural areas.[237] Yet over the last several decades, major droughts caused acute food insecurity, greatly impacting the stability and livelihoods of Somalis. These events have included a famine from 1991 to 1992; food crises from 1999 to 2000, 2006, and 2008, followed by another famine from 2011 to 2012; a food crisis in 2014; and a major drought and food crisis that nearly turned into a famine from 2016 to 2017.[238] This crisis left more than six million people to survive on severely contaminated water and diminishing food supplies.[239] People feared that the drought would lead to another famine, like the famine in 2011 to 2012 that killed over 250,000 people[240] with over half the deaths being children.[241]

Across the Horn of Africa, drought, desertification, flooding, and other changes in rainfall patterns and rainfall distribution have led to devastating effects on the land, resources, animals, and people. These effects have been exacerbated by poor agricultural and pastoral practices.[242] Practices such as overgrazing, or the clearing of land near a riverbank for livestock and agricultural use, cause rivers to change course and erodes nutrient-rich soil.[243] Deforestation, by way of the acacia bussei forests being cut down to accommodate the booming charcoal industry and the clearing of mangrove trees, is accelerating sand dune encroachment and further contributing to desertification.

Furthermore, recurrent flooding and heavy storms impact Somalia almost every year, increasing the threat and reality of displacement for already powerless populations.[244] In April 2018, over 830,000 people were impacted by flash and river flooding that forced 300,000 people to temporarily flee their homes and seek shelter elsewhere.[245] Many Somalis who return home after being displaced, either those identified as refugees or internally displaced persons (IDPs), find themselves experiencing displacement yet again following their return home.[246]

To address the impacts of the climate crisis, the Government of Somalia in 2013 created the National Adaptation Programme of Action on Climate Change (NAPA). NAPA, reflected by Somalia's commitment to the UN Framework Convention on Climate Change (UNFCCC), identified sustainable land management, water resources management, and disaster management as priority areas to combating the climate crisis.[247] In accordance with NAPA, the Government of Somalia—with support from the United Nations and several foreign government agencies—has developed projects that address climate risks. It has been working to enhance climate resilience of vulnerable communities through institutional frameworks and by engaging farmers and pastoralists in water and soil conservation and in monitoring and preserving water and land recourses.[248]

Since drafting NAPA, Somalia has ratified the 2015 Paris Agreement, and in 2018, submitted the Initial National Communication for Somalia to the UNFCCC.[249] Despite Somalia's commitment to developing action plans and strategies to alleviate climate crisis impacts, the government acknowledges that the country's adaptive capacity is severely limited by the high level of poverty, low level of incomes, insecurity, and the need for economic development.[250] As of yet, long-term climate adaption strategies have yet to be incorporated into national or sectoral budgeting or policies,[251] and it hinges upon Somalia finding the lasting peace and normalcy.

to natural gas and petroleum industries, to agriculture and livestock, to the destruction of carbon sinks like forests and marine flora—would also "reverse the refugee paradigm" by delinking the actor of persecution from the territory from which flight occurs. This move would be entirely unknown to refugee law.

3. A person fleeing the effects of the climate crisis might be fleeing a nation and government that has not turned against its citizens but rather wants to protect them. Some of the people experiencing the most disastrous effects of the climate crisis are living in nations that have long recognized the issue and that have appealed to the international community for support. Thus, the narrow legal notion of refugee in the 1951 Refugee Convention cannot generally guarantee protection to persons displaced across borders due to the impacts of the climate crisis.[214]

Collectively, any push for protections for climate refugees—whether by amending the 1951 Refugee Convention or developing a new legally binding international agreement—that fails to challenge the territorial nature of "persecution" within refugee law, will fail in its efforts to secure such protections. Thus, what is required is a new understanding of "persecution" that could account for the reality of the climate crisis and climate-induced displacement, and serve as the basis for a normative framing of "climate refugee" protection. Such a deterritorialized understanding of "persecution" under the climate crisis would need to continue accounting for the ability of one to survive and avail themselves of a sufficient degree of protection within their country of origin. Yet it would also need to recognize that the "actors" of persecution and the respective climate crisis impact are fundamentally indeterminable.

Internal Displacement

Displacement due to the impacts of the climate crisis by and large takes place within affected states. There were 28 million new IDPs in 2018 due to conflict, violence, and disasters—far greater than the 1.1 million refugees that same year.[215] Weather-related hazards triggered the vast majority of the new displacements (17.2 million), with storms and tropical cyclones accounting for 9.3 million displacements and floods accounting for 5.4 million displacements.[216] While the gap in protections for climate-induced displaced persons is most pronounced when such migration takes place across national borders, legal frameworks for persons displaced within national borders have the potential to cover climate-induced internal displacement.

Specifically, climate-induced displaced persons who relocate internally fall within the ambit of general human rights protections and the UN Guiding Principles on Internal Displacement, which defines IDPs as:

> "Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human made disasters, and who have not crossed an internationally recognized State border."[217]

The UN Guiding Principles restate and compile existing international human rights and humanitarian law germane to the internally displaced and also attempt to clarify gray areas and gaps in the various instruments with regard to situations of particular interest to the internally displaced. Yet, despite addressing "natural or human made disasters" and other such causes of internal displacement, the primary limit to the potential of the UN Guiding Principles is that it is not legally binding. Instead, it leaves it to national governments to adopt strategies and policies. Some nations and regional bodies have indeed taken such initiative. For example, in 2009, African leaders within the African Union adopted the Convention for the Protection and Assistance of Internally Displaced Persons of Africa, known as the Kampala Convention—the first legally binding international instrument on internal displacement.

For climate-induced displaced persons forced to relocate internally as well as those forced to cross international borders, across international humanitarian law, human rights law, refugee law, and other bodies of law, protections are limited, piecemeal, and not legally binding. Yet, although most climate-induced migration is internal and although legally binding protections for climate-induced IDPs have been achieved, this report continues to focus on climate-induced displacement across international borders (i.e., climate refugees). It does so because of the international cooperation required for such protection and because the climate crisis and its effects, broadly, require global accountability.

Food Insecurity and Food Refugees in a Changing Climate

The previous section described the proximate drivers and patterns of displacement and their prevalence, including the disproportionate experience of climate-induced migration across the Global South. It is thus clear that not all climate-induced displacement is the same and that such differences need to be accounted for within any normative framework applicable to climate-induced migration. These specific situations include persons moving across internationally recognized state borders in the wake of sudden-onset disasters; persons moving inside or outside their country as a consequence of slow-onset disasters, such as sea-level rise, prolonged drought, or desertification; and persons moving across internationally recognized state borders in the wake of their place of origin being designated as a high-risk zone too dangerous for human habitation.[252]

To better account for the ways that food insecurity can be the proximate cause of mass displacement through interactions with a host of other dynamics, including the climate crisis, this report asserts that "food refugee" protections need to be regarded as a useful proxy in situations where the climate crisis may have been a factor. This report defines "food refugees" as those peoples who have been forcibly displaced due to growing food insecurity caused by foreign military intervention, armed conflict, political and civil unrest, and/or environmental challenges. Yet this report recognizes that "food refugees" are a product of the interaction between these dynamics and trade liberalization, lax tariffs, subsidies, and cash crops. These trade policies set the stage for many developing countries to become importers of food crops and exporters of cash crops for consumption in the Global North.

Between 1961 and 2002, developing countries accounted for less than half of all wheat imports to two-thirds of all wheat imports.[253] Beholden to corporations, productivity pressures, and unfair trade agreements with nations in the Global North, the precarious situation facing farmers across the Global South has left them and their communities especially vulnerable to foreign military interventions, armed conflicts, political and civil unrest, and/or environmental challenges.

Thus, this report extends this definition of "food refugees" to peoples forcibly displaced by circumstances perpetuated by land grabs, seed monopolies, natural resource grabs, global warming, the increased commodification of food, and structures and arrangements of international free trade agreements. This report elaborates on two such drivers creating "food refugees" in the context of the corporate food regime and the chronic precariousness with which communities across the Global South are faced: climate-induced environmental variability and land grabbing.

DRIVER 1

Climate-induced Environmental Variability

According to the Food and Agriculture Organization (FAO) of the United Nations, the climate crisis will affect all four dimensions of food security: food availability, food accessibility, food utilization, and food systems stability.[254]

Concerning food availability, the FAO estimates that after 2030 the effects of the climate crisis will reduce the productivity of cropland, particularly in food-insecure areas such as sub-Saharan Africa. In the short-term, increases in global temperatures are likely to benefit crop and pasture yields in temperate climates while having negative effects in tropical and dry regions.

Concerning food accessibility—a matter of both food allocation and affordability—the FAO states that the effects of the climate crisis on productivity may cause families to allocate food differently within the household, especially within communities that rely on producing food for their own consumption. Further, increasing food prices affect low-income families more because on average they spend a larger portion of their income on food.

Concerning food utilization, the climate crisis will likely increase malnutrition in food-insecure areas that depend on agriculture due to its negative impacts on income and purchasing power. In addition, the climate crisis will change the distribution of pests and diseases, such as vector and waterborne diseases, posing risks to human health, food safety, and food security.

Finally, concerning food system stability, the predicted growing incidence of droughts and floods make it harder for communities that depend on rainfall agriculture to prepare for changes in productivity, thus threatening food stability. Increasing food emergencies and conflicts for diminishing food supplies will destabilize food systems.[255]

These effects of the climate crisis on food security will be especially pronounced for people whose livelihoods are dependent on agriculture, wildlife, and fisheries, and who are already marginalized and food insecure. This is especially the case in the Global South, where, for example, in the densely populated areas of Asia and the Pacific, agriculture accounts for between 40 percent and 50 percent of the workforce, and in sub-Saharan Africa, agriculture accounts for two-thirds of the workforce.[256] Yet, in the context of not only subsistence agriculture, but also a global food system premised on trade liberalization, lax tariffs, subsidies, cash crops, and vertical and horizontal integration, the impacts of the climate crisis will likely be felt more generally. Specifically, the climate crisis would likely affect market values for land; for water and agro-chemical inputs used in production; and for energy used in food processing, cold storage, transport, and intensive production of food.

Increased prices and greater price volatility have a greater impact in the Global South, where there are financial constraints to acquire such inputs and land while being locked within the global corporate food regime. Yet, according to the US Department of Agriculture, the United States (and, presumably, other nations in the Global North) appears likely to experience changes in the types and cost of foods available for import and increased demand for agricultural exports from regions that experience production difficulties yet have sufficient wealth to purchase imports. Finally, demand for food and other types of assistance from the United States could increase in nations that lack purchasing power.[257] Thus, in the immediate future, the rural poor of the Global South are more vulnerable to the impacts of the climate crisis on food insecurity, though the effects will likely also be felt by low-income urban populations around the globe as their access to food is threatened by extreme weather events, long-term environmental change, and volatile food prices.

DRIVER 2

Climate Crisis Mitigation and Land Grabs

An emerging issue for food security at the international scale involves the transnational acquisition of land resources. The Oakland Institute defines "land grabs" as the purchase of vast tracts of land from poor, developing countries by wealthier, food-insecure nations and private investors.[258] Land grabbing exacerbates food insecurity by forcibly displacing local people from their land—and thus their sources of income and food—and by globally expanding large-scale, export-driven agricultural models. This phenomenon gained momentum after the 2007–2008 global food crisis. After adverse weather, increasing demand, and rising fuel prices combined to rapidly raise food prices around the world in 2008, many corporations and governments set out to acquire property rights in foreign countries.[259] Reports indicated that between 2006 and the middle of 2009, foreign investors sought or secured between 37 million and 49 million acres of farmland in the Global South, and a 2010 World Bank analysis reported that nearly 140 million acres were acquired.[260]

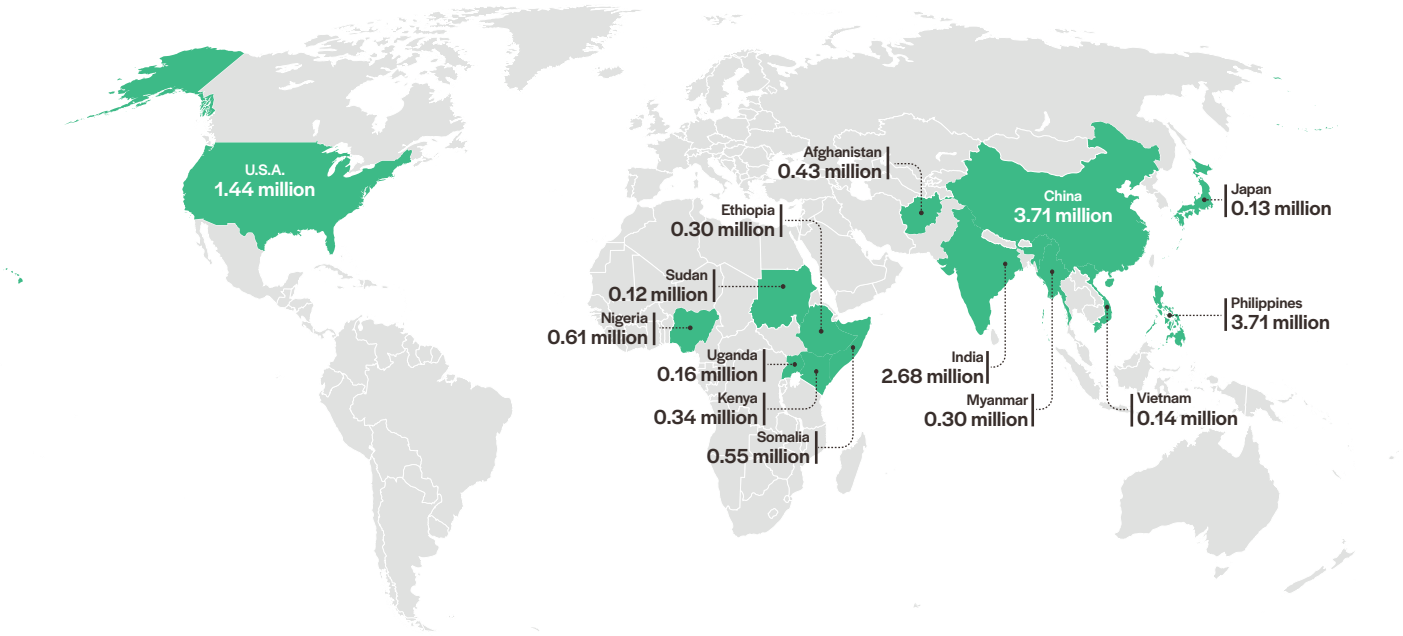
These international transfers of property rights are expected to increase in the coming years as a hedge against unfavorable climate conditions in any one region, and they have the potential to undermine food availability both in the countries selling the land rights and in the purchasing countries. In this context, the Oakland Institute defines three major drivers of global land grabs in particular. First is the growing demand for food from food-insecure nations short on agricultural land. Gulf states in particular are among the largest players given their food import dependency and increasing food import bills.[261] For example, in 2008, King Abdullah launched his "Initiative for Saudi Agricultural Investment Abroad," urging Saudis to go overseas and buy land, primarily in Asia and Africa.

The second driver of global land grabs is the demand for agro-fuels and other energy needs, including the proliferation of biofuels as a supposed climate crisis mitigation solution. Initially land grabs were driven by food insecurity at the national level (i.e., food and cattle production), but as the demand for and profitability of biofuels grew, land grabs became seen as a lucrative investment opportunity, and the need to address food insecurity lost appeal.[262] According to an ActionAid report, between 2009 and 2013, 98 European companies took over 6 million hectares of land in sub-Saharan Africa to grow biofuel crops. Beyond Europe and the United States, nations such as Brazil, Saudi Arabia, South Korea, and China are also large purchasers of agricultural land in poorer nations.[263]

The third driver is the rise of investing in the land market and soft commodities market—a term that generally refers to commodities that are grown (e.g., coffee, corn, soy), whereas hard commodities are those that are mined (e.g., oil, copper, and gold).[264] Traditionally, land markets have not provided the most effective returns on investment, as land presents myriad problems for investors, whether related to access, security, use, or consistency of production. However, the recent private sector push into farmland acquisition has rendered land markets and soft commodities attractive investments. Strong demand from emerging economies such as China, India, Central Europe, and South America, as well as new demands for bioenergy and other "bioproducts" from agricultural crops, are among the causes of this move toward soft commodities.[265]

The effects of land grabs on food insecurity are far reaching. For example, ActionAid estimated that European Union biofuel demands could increase food prices by as much as 36 percent by 2020.[266] Further, land acquisitions are also water acquisitions, wherein private companies own the water sources on the land they purchased and can use them to produce biofuels. Finally, the scramble for land has been concentrated among the wealthy, causing many of the world's small farmers to lose land ownership or witness a reduction of the land they own.

Major Countries with More Than 100,000 New IDPs Due to Natural Disasters in 2018



Source: Internal Displacement Monitoring Center (IDMC)

Migration and Labor

Although the topic of labor is relevant to both internal forced migration and cross-border forced migration, it deserves special attention because of the fact that—regardless of their reasons for moving—most people who migrate find jobs. According to the International Labour Organization, there are 164 million migrant workers in the world—a rise of 9 percent since 2013, when they numbered 150 million.[218] In the context of the climate crisis and the anticipated surge of climate-induced displaced persons, formal pathways for labor migration are necessary and may actually aid efforts to mitigate the havoc that the climate crisis may wreak on source countries and host countries alike.

Under the climate crisis, the need for secure and comprehensive pathways for labor migration is especially pronounced when it comes to key populations, such as migrant workers themselves. Migrant workers typically move to areas that are highly exposed to climate impacts, including low-lying land that is susceptible to floods, storms, or landslides, and many live in poorly constructed housing, compounding their vulnerability.[219] For example, during the 2011 floods in Thailand, migrant workers were among those most seriously affected: more than 800,000 migrants experienced the floods, while 600,000 were stranded in areas without food, water, or electricity.[220] These risks are thus pronounced for people already displaced due to social, political, economic, and environmental reasons in that they may face secondary or repeated displacement due to the impacts of the climate crisis.[221]

One can see how, in the context of the climate crisis, migrant agricultural laborers in particular are prone to such repeated displacement: they rely on natural resources for their revenue and subsistence, and they are also heavily concentrated in regions that are increasingly experiencing extreme weather events and in areas with weak infrastructure, limited financial institutions, and few opportunities to diversify their income streams.[222]

Clearer and more secure pathways for labor migration may mitigate some of these challenges and form part of proactive, long-term, and comprehensive strategies for addressing displacement, especially in the context of the climate crisis. Yet existing labor migration schemes

highlight the obstacles along the way. For example, such pathways may result in more men migrating, leaving women behind and facing more work; those targeting unskilled and low-skilled workers may expose them to exploitation and abuse; and schemes may be too small in scope to deliver significant benefits.[223] Additionally, migrant workers may be driven into the informal economy, thus perpetuating dual economies and placing downward pressure on wages and benefits for all workers.[224] It is therefore vital that schemes or policies aiming to increase and enhance labor migration opportunities for people impacted by the climate crisis are driven by the needs of families and communities, including women; have robust safeguards in place to prevent exploitation; and provide opportunities for permanent and seasonal migration.[225]

Additionally, existing labor migration schemes are information-poor, thus undermining their potential. Specifically, there is limited data in many low- and middle-income countries concerning labor migration patterns, the skills of native-born and migrant workers, and labor market needs.[226] Collecting reliable labor market information is an important step for considering how genuine labor shortages may be linked to improving the skills of workers in communities that are especially vulnerable to the effects of the climate crisis.

Labor market analysis—such as value chain development and analysis of the potential for job creation, including green jobs—could strengthen the supply of decent work opportunities. Critically, they could do so while also taking into account future expected impacts of the climate crisis on labor markets. Such work is indeed underway: International Labour Organization assessments on the potential for green jobs have already helped guide the development of employment policies in Bangladesh, China, Lebanon, Mauritius, Mexico, Mozambique, and Portugal.[227]

Despite these gaps, existing labor agreements have indeed offered secure pathways for migrants. Bilateral labor mobility agreements have been especially fruitful. Agreements between Spain and Colombia, as well as island states, such as Papua New Guinea and New Zealand and Australia, for example, have integrated into their seasonal worker programs considerations for the development of climate-affected areas. Workers from communities affected by natural disasters are given special consideration for work placement abroad. The benefits are clear: in the case of small island states, these arrangements have been instrumental in generating remittances in communities severely compromised by sea-level rise and flooding. In Spain, temporary agricultural work visas are supplied to workers from Colombia, targeting people from high-risk zones for natural disasters, including volcanic eruption.[228]

However, to be most effective, institutional and regulatory frameworks—whether bilateral or multinational—would need to be aligned with international labor standards, human rights law, and humanitarian law as they account for at-risk areas and climate-induced displacement. Toward such ends, the Committee on the Protection of the Rights of All Migrant Workers and Members of their Families (CMW) within the Office of the High Commissioner for Human Rights has raised the climate crisis in their work. Specifically, the CMW referred to climate change in its List of Issues for Paraguay and it asked the state to provide information about measures it had taken to address the causes of irregular migration, including the climate crisis.[229]

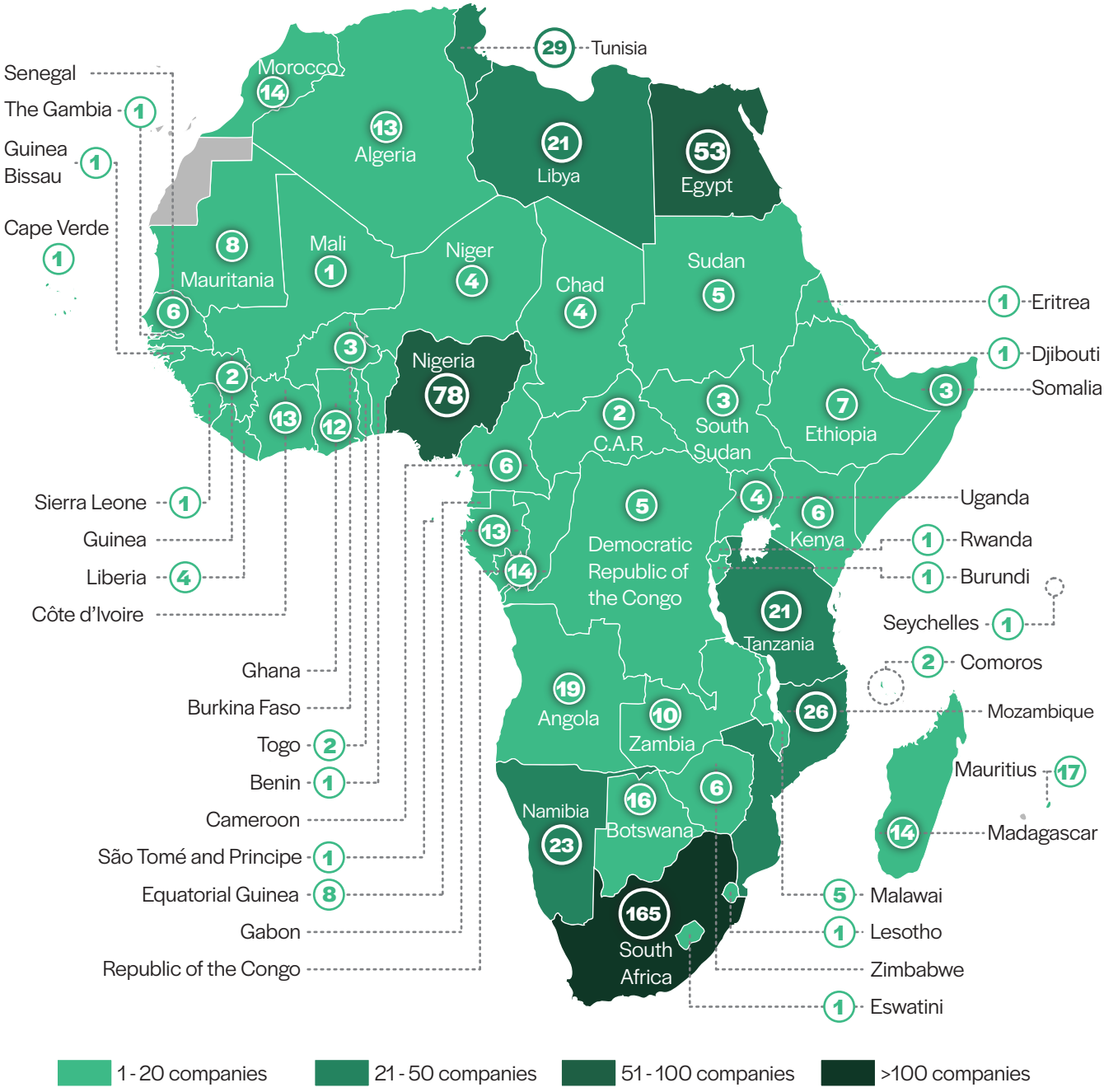
Gaps in Political-economic Understanding

Collectively, across international humanitarian law, human rights law, refugee law, and other bodies of law, protections for climate-induced displaced persons forced to cross international borders are limited, piecemeal, and not legally binding. This report argues that a comprehensive framework for climate-induced displaced persons forced to cross international borders— "climate refugees"—is necessary and that it needs to be applicable to two specific situations:

- persons moving across internationally recognized state borders as a consequence of sudden-onset or slow-onset disasters; and
- persons permanently leaving states no longer habitable (including "sinking island states") as a consequence of sudden-onset or slow-onset disasters.[267]

This report targets a key condition for refugee status: "persecution." Specifically, this report advances a new deterritorialized understanding of "persecution" under the climate crisis, which accounts for the ability of one to survive and avail themselves of a sufficient degree of protection within their country of origin. It does so while recognizing that the "actors" of persecution and the respective climate crisis impacts are fundamentally indeterminable. Although the climate is changing due to a number of sources, this report focuses on the "persecution" that is built into our global dependence upon petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence. In short, the focus is on "petro-persecution," which operates across the world economic system and regional, national, and local levels.

Number of Fossil Fuel Companies Active in Africa*



*By fossil fuels, we only refer to coal, natural gas, and petroleum extractions

See appendix for additional information on these companies.

Source: Net Advantage Database

The Climate Crisis and the World Economy

COAL, OIL, NATURAL GAS, and other fossil fuels are the primary source of energy today and have long fueled global economic development. Yet the burning of fossil fuels for energy and the dependence of entire industries and industrial processes upon such fossil fuels (e.g., industrial agriculture, steel production, and other manufacturing) has produced catastrophic changes in the earth's climate, putting the world's most vulnerable communities at risk.

This section recounts the importance of fossil fuels to the strengthening of corporations and capitalist nations in particular, attending to the subservience of the latter to the former. It includes the global significance of such developments and addresses how, following such histories and the consolidation of the resolutely capital world economy, every nation—regardless of their political system and ideology—is subject to the global economic dependence on fossil fuels. It looks at two ways this global dependence on fossil fuels has been sustained, imbricating capitalist and noncapitalist nations alike: firstly, US efforts to maintain the US dollar as the reserve currency for key international commodities, especially oil, and secondly, the investment priorities of the world's largest banks.

Fossil Fuels and the Rise of State and Corporate Power

The concentration of energy within centralized stocks of fossil fuels, such as coal, petroleum, and natural gas, was a boon to the growing capitalist economies of Europe, the United States, and elsewhere, ultimately transforming cities and towns from energy-scarce sites into locations of energy superabundance as the limits to growth were contained. Although capitalist economic growth did not begin with fossil fuels, fossil fuels were critical to the labor control and exploitation that capitalism demanded as part of such growth.

Specifically, capitalism first ran on renewable energy—namely, solar and hydropower—and even when the transition to coal took off in the 1830s, a vast majority of hydropower remained relatively untapped and inexpensive. When rivers ran low and factories closed, bosses expected workers to return whenever there was sufficient water, demanding excessively long working hours. As a result, the first and foremost demand of the emerging labor movement was the fight for the "working day." The 1833 Factory Act, for example, was an attempt to establish a regular working day in textile manufacturing.

Coal solved such early labor issues for capitalists by allowing production to take place anywhere and anytime. Aiding their counterattacks against such workers demanding fairer working conditions, factories with coal-powered steam engines could be placed in towns, where unemployment and state crackdowns on labor movements weakened workers' resistance to the demands of capitalism. Together, across the capitalist economies of Europe and its extensions elsewhere, coal was not only essential to empowering state and corporate actors but also securing the state's largely subservient role to capital.[268]

The mid-twentieth century's development of cheap and abundant energy from oil only intensified the paired rise of state and corporate power across Europe, the United States, and elsewhere. This was especially clear in the United States. The first massive corporations in the United States were railroad companies, which used coal and the steam engine as they aided the development of the United States from the industrial revolution in the Northeast (1810–1850) to the settlement in the West (1850–1890). Yet, as political theorist Timothy Mitchell argues, the material composition of oil, the requirements of exploration, and the production process were a boon to the US government and oil companies alike, for these features of oil allowed for the concentration of expertise in the hands of select engineers, scientists, and capitalists.[269] Case in point: the rise of Standard Oil and its command of capital and state power.

Spotlight
Lake Chad Basin

The shrinkage of the Lake Chad Basin is recognized as one of the world's most severe humanitarian crises.[301] It is a foreboding example of how the climate crisis is tied to social, economic, and political instabilities to affect nation-states, peoples' livelihoods, and key resources. Over 370 million people depend on the Lake Chad Basin for their survival, and an estimated 12 percent of the population have been forced into abject poverty due to the basin's receding water levels.[302]

The shrinkage of the basin has forcibly displaced roughly 4.5 million people including IDPs, refugees and returnees.[303] An estimated 94 percent of those forced to leave their homes were displaced by conflict, while 6 percent were displaced by communal clashes, and 1 percent displaced by natural disasters.[304] While data demonstrates that the largest number of those displaced were forcibly displaced by conflict and violence, the climate crisis is exacerbating underlying resource tensions and conflicts in the region, and displacezment by climate or natural disasters goes largely underreported.[305]

The Lake Chad Basin spans the borders of Chad, Niger, Central African Republic, Nigeria, Sudan, Algeria, and Cameroon. Lake Chad, once a massive lake slightly larger than the state of New Jersey,[306] has significantly decreased since 1963 from roughly 25,000 square kilometers to less than 2,500 square kilometers in 2013,[307] with half of the reduction a result of the climate crisis.[308] As of 2017, the lake has lost approximately 95 percent of its total water mass.[309]

For generations, communities that live around the lake have engaged in fishing, livestock farming, agriculture, and trade as a way to make a living.[310] Moussa Mainakinay, Chief of Bougourmi, was born in 1949 on the island of Bougourmi, one of Lake Chad's many islands, and he remembers the lake as a plentiful life source that sustained his community's and ancestors' way of life.[311] Yet beginning in the 1970s, he observed that the lake was shrinking and that the mainland was encroaching.[312]

By the end of the 1990s, the region had been devastated by continuous drought and famine; the cattle became diseased, the rivers that used to feed into the lake dried up, and people started to die of hunger.[313] Recurrent and prolonged droughts in the Lake Chad Basin region significantly decreased the amount of water and arable land available for fishing, farming, and pastoral livelihoods, which translated to food, water, and job insecurity, elevating the level of extreme poverty and subsequently driving people out of the area.[314]

A study conducted by the International Organization for Migration found that residents of the Lake Chad Basin noted, over the course of the last decade, an increase in temperature and decrease in rainfall, which greatly impacts their local and traditional knowledge of the climate.[315] People also observed the disappearance of indigenous plant, animal, and other species from the region.[316] The inability of governments to adequately address issues related to resource scarcity has exacerbated tensions in the region between pastoralists and farmers to a level of desperation leading to community clashes and violence for access to water and arable land for farming and cattle grazing.[317]

Member states of the Lake Chad Basin Commission, a body created to regulate the use of the basin water, have taken initiatives to prevent further degradation of the lake. However, challenges such as desertification, deforestation, forced migration, short-sighted solutions, and financial challenges, among other issues, have made governments' measures difficult to implement.[318] The mismanagement of water resources by the affected countries, and the impacts of the climate crisis and environmental degradation, have been exacerbated and complicated by violence inflicted by civil wars[319] that have been terrorizing local communities in the Lake Chad Basin region for several decades.[320]

Like many countries around the globe, African nations find themselves struggling to cope with the climate crisis due to impeding factors such as poverty, weakened institutions, and fragile ecosystems that impede their ability to develop current and future strategies to combat environmental variabilities.[321] To address peace-building efforts, remedies for environmental challenges, and to establish sustainable development in the Lake Chad Basin, governors from states and provinces in Cameroon, Niger, Nigeria, and Chad met in 2018, with support and funding from the UN Development Programme–Nigeria and the Government of Germany, to create the Lake Chad Basin Governors' Forum.[322] In 2015, the four countries submitted a climate action plan to the UNFCCC, and since then each country has signed and ratified the Paris Agreement.[323] As temperatures are predicted to dramatically increase across the globe, the climate crisis is expected to further destabilize the region, and comprehensive, transboundary solutions are needed to address the adverse effects of the climate crisis before it is too late.[324]

Established in 1870 by John D. Rockefeller and Henry Flagler, Standard Oil dominated the oil products market initially through horizontal integration in the refining sector, then in later years, vertical integration—acquiring pipelines, railroad tank cars, terminal facilities, and barrel manufacturing factories. The company was also an innovator in developing the business trust, where the stockholders of Standard's group of companies transferred their shares to a single set of trustees who controlled all of the companies. The Standard Oil trust streamlined production and logistics, lowered costs, and used aggressive pricing to destroy competitors in production, distribution, and retail. In 1904, Standard Oil controlled 91 percent of oil production and 85 percent of final sales in the United States.[270]

In 1911, the US Supreme Court ruled, in a landmark case, that Standard Oil was an illegal monopoly, necessitating the dissolution of its trust into 34 smaller companies. Yet, the processes that defined Standard Oil's ascendance are still commonplace. Integration downstream, including acquiring retail networks of gas stations, and integrating upstream, such as the buying of oil- and gas-producing fields and exploration leases, are defining features of corporate power in the United States and other capitalist nations. These dynamics ramped up again in the 1970s and 1980s. With mega-mergers in the 1990s and 2000s creating major corporations like ConocoPhillips and ExxonMobil, Standard Oil's successors are still among the companies that generate the largest profits worldwide.[271]

As before, their growth did not happen without state support. Despite the dissolution of Standard Oil, in the past 100 years, the federal government has put more than $470 billion into the oil and gas industry in the form of generous, never-expiring tax breaks. As early as the 1920s, oil and gas subsidies were averaging $1.9 billion a year in today's dollars. Taxpayers currently subsidize the oil industry by as much as $4.8 billion a year, with about half of that going to five major oil companies—ExxonMobil, Shell, Chevron, BP, and ConocoPhillips—which get an average tax break of $3.34 on every barrel of domestic crude oil they produce.[272]

Fossil Fuel Dependency and the World Economy

Capitalism as a mode of organizing social and economic life began in the fifteenth and sixteenth centuries in northwestern Europe, especially in the Netherlands (Dutch Republic) and England. Yet from the beginning, it involved outward expansion, encompassing ever-larger areas of the world in a network of material exchanges and extraction. Over the following centuries, this network of exchange and extraction developed into a world market for goods and services, and an international division of labor. The process took place neither peacefully nor equitably, but instead through colonial and imperial expansion. By the end of the nineteenth century, the project of a single "capitalist world economy" had been completed. The grid of such exchange relationships now covered practically all peoples and parts of the world.

The development of this world economy involved a fundamental and lasting rift within and between parts of the world. More recently, this rift has been understood as one between the Global North and Global South. These terms—traditionally used within intergovernmental development organizations to refer to economically "advantaged" nation-states such as the United States and the European nations, and "disadvantaged" nation-states such as those across Latin America, Africa, and Asia—describes the colonial and postcolonial exploitation of the latter that has underpinned the global dominance of the former. Yet the Global South can also refer to the geography of capitalism's externalities and subjugated peoples both within and beyond the borders of wealthier countries such as the United States and European nations.[273]

Fossil fuels were a boon to capitalist nations and corporate entities long after modern nations and capitalism had their start, as part of this world economy consolidated under the United States and European nations. Now every nation—capitalist or not—is forced to reckon with the global economic dependence on fossil fuels.[274] Attempts by nations and international bodies to assert independence from this global regime have gone against US and European geopolitical interests and helped motivate economic and military responses. Such confrontations have taken place around the US dollar as the reserve currency for key international commodities, especially oil.

Saddam Hussein's regime, for example, had increasingly traded Iraq's oil in the euro, enhancing its value as an international currency competing with the US dollar. Likewise, Muammar Qaddafi had proposed the possibility of a common currency in the African Union.[275] Although the 1990 US-led invasion of Iraq was premised on Iraq's invasion of Kuwait, and the 2003 invasion was based on false claims that Iraq possessed weapons of mass destruction and links to Al-Qaida, and although the 2011 assault on Libya was based on that regime's repression of civilians, the threats both leaders posed to the United States and its massive multinational fossil fuel corporations were motivating factors for the conflicts intended to depose them.

In 2019, the US Treasury Secretary, Steven Mnuchin, warned European nations to abide by US sanctions on Iran—targeting Iran's oil exports following the 2018 US withdrawal from the Joint Comprehensive Plan of Action—or they will be banned from using the dollar system for international transactions. Thus, against such threats to US and European states and corporate power and the fossil fuel-dependent capitalist world economy more broadly, the world has seen intensification of war by financial and other nonmilitary means.

Our capitalist world economy and dependence on fossil fuels have also been sustained, in part, by the business practices of the major banks of Europe and North America. A 2019 report released by Rainforest Action Network, BankTrack, Indigenous Environmental Network, Oil Change International, Sierra Club, and Honor the Earth reveals that 33 global banks have provided $1.9 trillion to fossil fuel companies since the adoption of the Paris Agreement at the end of 2015. The amount of financing has risen in each of the past two years. Of this $1.9 trillion total, $600 billion went to 100 companies that are most aggressively expanding fossil fuels extraction, refining, and distribution.

The four biggest global bankers of fossil fuels are all US banks—JPMorgan Chase, Wells Fargo, Citibank, and Bank of America. Barclays of England, Mitsubishi UFJ Financial Group of Japan, and RBC Royal Bank of Canada are also massive funders in this sector. Notably, JPMorgan Chase is by far the largest banker of fossil fuels extraction and expansion—and therefore the world's worst banker financing the climate crisis. Since the Paris Agreement, JPMorgan Chase has provided $196 billion in finance for fossil fuels, nearly 10 percent of all fossil fuel finance from the 33 major global banks.[276]

US Disengagement in Climate Crisis Mitigation and Adaptation

The predominantly US-led bankrolling and state-led militarized protection of fossil fuel interests has gone hand in hand with the United States' disengagement from international efforts to challenge the global dependence upon fossil fuels. In 2015, after two decades of talks, 195 countries agreed to curb greenhouse gas emissions, adapt to the adverse impacts of the climate crisis, and foster and finance climate-resilient development starting in the year 2020. The Paris Agreement sets out to enhance the implementation of the UNFCCC and push countries to set targets beyond previously set mitigation, adaptation, and finance targets.

Yet in June 2017, President Donald Trump announced that the United States—the world's second-largest emitter of greenhouse gases after China, with the European Union a distant third—would withdraw from the Paris Agreement. Justifying his decision, President Trump stated that the agreement is "less about the climate and more about other countries gaining a financial advantage over the United States"—highlighting the concern that a meaningful curb on emissions would affect the profits, power, and reach of US multinational corporations.[277]

The United States' resistance to the Paris Agreement has not been limited to the current administration. During the September 2016 ratification, then-US secretary of state John Kerry stated that "[e]ach day the planet is on this course, it becomes more dangerous....[I]f anyone doubted the science, all they have to do is watch, sense, feel what is happening in the world today. High temperatures are already having consequences, people are dying in the heat, people lack water, we already have climate refugees."

After US negotiators demanded the exclusion of language that could allow the agreement to be used to claim legal liability for the climate crisis, critics said the agreement would still condemn hundreds of millions of people living in low-lying coastal areas and small islands to a precarious future. These announcements undermine ongoing efforts toward climate mitigation, adaptation, and finance, within and outside the agreement. Further, they undermine more expansive accounts of the climate crisis itself that had begun to surface in recent years, including acknowledging its effects with regard to mass migration.

Because of the federal-level disengagement with climate mitigation and adaptation, and decarbonization—including the Paris Agreement, one of the strongest displays of global willingness to take urgent action—various communities and public and private actors have instead made some ground. As Christiana Figueres, the former UN climate chief who delivered the Paris Agreement, remarked, "[s]tates, cities, corporations, [and] investors have been moving [toward climate mitigation and adaptation] for several years and the dropping prices of renewables versus high cost of health impacts from fossil fuels, guarantees the continuation of the transition."

Such has been the case within the United States itself, where states have already pushed back on Trump's decision and vowed to adhere to the principles of the Paris Agreement. For example, only one week after President Trump's announcement, Hawaii became the first state to enact legislation aligning with the Paris Agreement. The bills signed by Hawaii Governor David Ige were SB 559 (Act 032) and HB 1578 (Act 033). HB 1578 establishes a Carbon Farming Task Force, and SB 559 expanded "strategies and mechanisms" to cut greenhouse gas emissions across the state "in alignment with the principles and goals adopted" in the Paris Agreement.

Corporate Power, State Violence, and Land Defenders

The activities of corporations exacerbate the critical need for a rapid phase out of fossil fuels amid estimates that the world's clean energy investment needs are $2.4 trillion per year up to 2035.[325] Yet the largest banks and corporations have unacceptably poor performance on human rights, particularly Indigenous rights, as it relates to the impacts of specific fossil fuel projects and the climate crisis in general. There is no shortage of examples: from the Indigenous-led opposition to each of the three major proposed tar sands oil pipelines in North America, to the fragile Arctic National Wildlife Refuge under threat from drilling, to German utility RWE's plans to expand an open-pit lignite coal mine while destroying the 12,000-year-old Hambach Forest. Each of these highlight that banks lack effective energy and human rights policies to prevent them from financing these highly troubling projects and the companies behind them.

When it comes to fighting such fossil financing, the stakes of climate activism become especially clear. According to the international environmental organization Global Witness, 2017 saw a total of 207 killings of environmental activists, or defenders. That's more than 2016, making 2017 the deadliest year on record. Agribusiness had the most deaths associated with it, with a reported 46 activists killed in disputes over large-scale agriculture projects.[326] Agribusiness was followed by the oil and mining industry, which has historically been the most dangerous field for activists, with 40 killings. Poaching and logging were tied for third with 23 reported deaths each. There is an obvious asymmetry of power between agribusinesses and their political backers on one side and Indigenous peoples, small-scale farmers, and other marginalized communities on the other.

Spotlight
Myanmar

Myanmar is a Buddhist-majority country that has been characterized by a history of state-sponsored ethnic cleansing and genocide of hundreds of thousands of Rohingya—an ethnic Muslim minority population from Rakhine State.[327] In 2016, thousands have been killed and more than 730,000 Rohingya have fled to Bangladesh.[328] In 2019, Bangladesh stated that it could not accept any more refugees from neighboring Myanmar,[329] yet conditions remain perilous for the 500,000 to 600,000 Rohingya still in Rakhine State.[330] Political conflict and violence coupled with natural disasters contribute to the large volume of displacement within and across the country's borders.

The largest economic sector in Myanmar is agriculture, which employs 61 percent of the country's workforce and comprises 30 percent of the total GDP.[331] Seventy percent of Myanmar's population lives in rural areas and relies on agriculture, livestock, and fisheries as a means of income and subsistence.[332] Rising temperatures and the increased frequency and intensity of extreme weather events[333] have impacted agricultural production and escalated food insecurity in the country.[334]

Notably, the country's central dry zone, inhabited by one-third of the total population,[335] is particularly vulnerable to drought, further straining water resources for domestic and agricultural use.[336] Droughts are also affecting the agrodiversity in the dry zone, and over the years there's been an increase in pests, diseases, and the spread of invasive species, as well as wildfires induced by rising temperatures.[337] As evidenced by Khindan—where people have been forced to leave the village to seek work in Thailand—reduced agricultural productivity has forced people to migrate from rural to urban centers, or to leave the country entirely.[338]

Additionally, Myanmar's coastal regions are extremely vulnerable to sea-level rise. The sea level is predicted to rise from 20 to 41 centimeters by 2050 and from 37 to 83 centimeters by the end of the century.[339] A 50-centimeter increase in sea level would submerge the current shoreline of the Ayeyarwady Delta, causing the delta to advance inland by 10 kilometers.[340] The effects of sea-level rise in the country are already clear. In just the last 10 years, the coastal village of Khindan has experienced accelerated erosion of its seafront area. Even further, the village lost its freshwater well to rising sea levels—a well that used to be in the center of the village.[341] As stated by one village resident who lost her home to the sea, "We feel like hermit crabs, we do not have a place to live."[342]

Furthermore, extreme flooding brought on by monsoon rains has become a major cause of displacement within and outside of Myanmar as heavy rains and flooding destroy tens of thousands of acres of farmland, as well as houses, dams, and other vital infrastructure.[343] In 2015, 1.7 million people were displaced due to deadly monsoon rains,[344] and from 2016 to 2018, between 298,000 and 500,000 people have been displaced every year by natural disasters, mainly from heavy flooding and landslides.[345]

Climate crisis impacts are also expected to increase the intensity and frequency of cyclones in Myanmar, which are especially hazardous for the country's residents. For example, Cyclone Nargis in 2008, a category 4 storm, tore through the low-lying Ayeyarwady Delta, taking the lives of 138,373 people and affecting an additional 2.4 million.[346] Estimates predict that in the future, Myanmar can expect more than 560,000 people per year will be displaced by flooding and other sudden-onset disasters.[347]

Myanmar has signed and ratified the Paris Agreement. Additionally, the country has identified through its Sustainable Development Plan (2018–2030) that increasing resilience to the climate crisis and implementing strategies to better protect the country's ecosystem, and environment, are essential to current and future development and stability.[348] The government plans to lead the country toward a low-carbon and green economy that efficiently utilizes its natural resources through sustainable practices.[349] However, despite any efforts to build climate crisis resilience for vulnerable communities and the environment, the government's actions will be duplicitous as long as the egregious human rights abuses, ethnic cleansing, and genocide of the Rohingya Muslims continues.

Spotlight
Sri Lanka

Sri Lanka ranked second on the 2017 Global Climate Risk Index for countries most affected by the climate crisis.[350] The most frequent natural hazards impacting the country include floods, droughts, and cyclones.[351] Mountains located in the south-central region of the country divide the island into distinctive regions—the central highlands, the plains, and the coast—and influence the distribution of rainfall. Thus, while parts of the island nation must cope with higher susceptibility to droughts, other regions that experience monsoons are vulnerable to increased flooding.[352]

Sri Lanka locally produces 85 percent of its food, and so either type of climate impact carries with it the potential to devastate the country's food and agricultural sector.[353] Such threats are already clear. For example, from 2016 to 2017, a severe drought—the worst drought in 40 years—devastated 45 percent of the paddy crop, the country's main staple food, and caused 900,000 people to be food insecure.[354] Likewise, in 2018, 100,000 people were displaced due to disasters, and of those, 75,000 were displaced by severe flooding triggered by monsoon weather conditions[355] and landslides.[356] A year prior in 2017, 500,000 people were displaced by flooding and 200 people were killed by landslides.[357]

Projected climate changes that will have significant impacts for Sri Lanka include increased temperature,[358] water and food insecurity, changes in rainfall patterns, increased severity and frequency of extreme weather events, and sea-level rise.[359] These effects will force people to migrate from inland and coastal regions alike in search of work and safe living conditions.[360] For example, rising sea levels will continue to have a negative impact on major industries such as fishing and tourism.[361]

Altogether, changes in average weather resulting from the climate crisis are predicted to reduce income in Sri Lanka by 10 percent by 2050,[362] and by the middle of the century, an estimated 19 million people in Sri Lanka will be living in moderate to severe climate hotspots.[363] What's more, vector-borne diseases, such as dengue fever, as well as rodent and waterborne diseases, are projected to have increased health risks connected to the climate crisis and its varying impacts.[364]

The climate crisis often interacts with other dynamics internal to a region or nation. In May 2009, after two and a half decades of violent conflict between the majority Sinhalese and the minority Tamil populations, the Sri Lankan Civil War came to an end.[365] The civil war, which began in 1983, was fueled by postcolonial policies established during Sri Lanka's colonial era that limited social and economic rights to the country's minority Tamil citizenry.[366] A decade after the civil war, the country is grappling with the deep traumas brought forth by prolonged violence, and many of the systemic issues that led to the civil war remain unresolved.[367]

As part of the country's efforts to move forward from the devastation of its past, the Sri Lankan government has committed to building a "sustainable and resilient society"[368] by working toward achieving the UN Sustainable Development Goals and mitigating the effects of the climate crisis.[369] The Sri Lankan government has identified the climate crisis as "a major threat looming over the economic and social development of the country," with the country becoming increasingly vulnerable to more intense and extreme climate events.[370]

Moving toward their sustainability goals, the Sri Lankan government has submitted their National Adaptation Plan for Climate Change Impacts in 2016,[371] ratified and signed the Paris Agreement, and established strategies for the country's Nationally Determined Contributions.[372] In 2018, Sri Lanka also submitted a Voluntary National Review on the Status of Implementing the Sustainable Development Goals.[373] Notably, Sri Lanka is heavily engaged in mangrove conservation efforts and will become the first nation in history to replant and preserve all of its mangrove forests in an effort to protect the ecosystem.[374] The mangrove restoration project stems from lessons learned from the tsunami in 2004, for it became especially clear that mangroves are able to absorb the height and intensity of big waves, as well as sequester and store carbon. Thus, such efforts serve as a preventative measure to protect coastlines, human life, and resources from the impact of future tsunamis.[375]

In addition to the Sri Lankan government's efforts to mitigate climate crisis impacts, Sri Lanka will need external support from the international community, including financial and technical assistance, in order to successfully implement the actions as outlined in the country's national adaptation plan.[376]

"Petro-Persecution," Migration, and the Fossil Fuel-Dependent World Economy

EVEN ABSENT THE CLIMATE CRISIS, "persecution" from sources outside one's country of origin is a fundamental feature of our capitalist world economic system. As stated, the nation-states of the Global North include the United States and European nations, and the nation-states of the Global South include those across Latin America, Africa, and Asia, with the colonial and postcolonial exploitation of the latter underpinning the global dominance of the former. Ultimately, the structural vulnerability and mass expulsions that have followed from exploitation of the Global South by the Global North have been met with militarized borders, criminalization of migration, fewer resettlements, and limited refugee protections.[278] The ultimate goal: to secure wealth from the Global South and inhibit its redistribution back to the Global South via subsequent migration of workers and remittances, among other means.[279]

Under the climate crisis, these features of the world economic system and its dependence on fossil fuels become much clearer. It is evident in the exploitation of the most marginalized communities in the extraction, refining, and distribution of fossil fuels and in the impacts of the crisis on impoverished communities that derive the majority of their incomes from agriculture, fishing, and wildlife. State- and corporate-backed dependence on fossil fuels belabors the deterritorialized "persecution" that many communities will continue to face from sources within and outside their own country of origin, especially when climate refugees from the Global South seek resettlement in the Global North. In 2018, for example, the Internal Australian Defence Force predicted the military may be forced to increase patrols in Australia's northern waters to deal with "sea-borne migration" sparked by rising sea levels in the Indo-Pacific region.

This section argues that two dynamics—neoliberalization and securitization—describe deterritorialized "persecution" inherent to the present-day capitalist world economy and "petro-persecution" under the climate crisis in particular. It explores governing the relatively unhindered flow of wealth and resources from the Global South in conjunction with efforts to stem subsequent migration and resettlement.

"Petro-Persecution" and Neoliberalization

The first dynamic of transnational "persecution" specific to the present-day system of a capitalist world economy is neoliberalization. The term describes the late-twentieth century reinterpretation and exercise of state and political power modeled on market-based economy values and the expulsions, displacements, and exclusions that follow therefrom.[280] Within migration research, the dynamic of neoliberalization and its effects on migration have been effectively accounted for when placed within a Global North-Global South frame, offering some coherence to patterns of displacement and the reluctant, provisional, and seemingly arbitrary nature of resettlement today.

While it is a global phenomenon, neoliberalization since the 1970s has affected the Global North and the Global South in different ways, shaping contemporary removals, exclusions, and mobilities within and across each. As David Lloyd and Patrick Wolfe argue, in the Global North, neoliberalism has manifested in cuts to, and the privatization of, state-furnished public services, from public utilities, education, and health care, to social welfare, public space, and other services (i.e., "austerity"). The rationale is clear: to the neoliberal state, these public goods represent vast storehouses of capital, resources, services, and infrastructure and, thus, targets for expropriation and exploitation.[281]

These enclosures have been devastating for the general public in countries within the Global North, with unemployment, out-migration, foreclosures, poverty, imprisonment, and higher suicide rates having become central features of this transformation. These outcomes can be understood as their own displacements of sorts, such as displacement from one's home and neighborhood vis-à-vis

Interview
Nnimmo Bassey

Director of the Health of Mother Earth Foundation, Nigeria

Regarding the threats of the climate crisis, looking across both your work with farmers and environmental organizations, what's the biggest concern to state officials and civil society?

Like other responses to the climate crisis, the regions of origin of displaced persons are the ones bearing the heaviest burdens of action. In terms of direct climate action, vulnerable regions and peoples are forced to bear the brunt of the shrinking carbon budget by taking adaptation measures (sometimes a matter of survival) while the polluters continue with business as usual. It seems that policy-makers from powerful measures consider themselves to be immune to the climate crisis and assume the posture that the erection of physical, socio-economic, cultural, and other barriers are the best ways to lock out the victims and insulate themselves while at the same time using the posture as the best ways to secure the support of their right-wing bases.

To some extent, some civil society actors aligned with neocolonial and neoliberal socioeconomic superstructures do not think differently than the state officials. This is one reason why many find it impossible to accept that there are climate refugees today. And that the numbers will continue to rise irrespective of how many, sadly, drown in the Mediterranean Sea. They hide under the specious shield that the Geneva Convention did not include climate-induced displacement as a factor that could qualify anyone to be accorded a refugee status. By insisting that people displaced by climate impacts are merely "climate migrants," the victims are refused the courtesies, responses, and supports that refugees ought to receive.

The big concern we see here is that of mind-sets that can be equated to coloniality, which pervades the thinking and actions of neoliberal, exploitative state, and civil society officials. Some also see climate change as something that is either inevitable or will be resolved somehow at some point—not now. Matters are compounded by the constant insinuation that the solution to the climate crisis will be found in technologies, and this often pushes up suggestions of modern biotechnology (including the so-called climate smart agriculture) and geoengineering.

Oftentimes the issue of the climate crisis is framed as an issue of food security and security more broadly. Can you speak to how these dynamics might be operating in the context of long-term change across the Niger data region? Has the climate crisis and/or militarization played any role in exacerbating the underpinning issues of food security?

Climate change bares its fangs in very stark manners in Nigeria. The pressures are building from the north and south of the nation and manifest in violence along the way. The impacts on food security are severe. Here is how. Take the case of Lake Chad, the inland freshwater lake that is shared mostly by Cameroon, Chad, Niger, and Nigeria. That lake has lost 95 percent of the size it had in the early 1960s. That shrinkage and resultant water stress has been exacerbated by climate change, which reduced the quantum of recharge from rainfall. The shrinkage has grossly impacted fisheries, farming, and pastoral activities around the lake and caused impoverishing of the dependent population and forced many to migrate southward and in other directions. This is one of the causative factors that has bred violent conflicts between farmers and pastoralists in the country. The state of conflict has led to a heavy militarization of farming communities and a general sense of insecurity in the region.

The conflict in the Niger Delta is complicated by oil exploration and extraction activities. Sea-level rise, soil subsidence, and canalization by oil companies compound coastal erosion and damage of freshwater systems. These affect food production as well as availability of potable water. Bearing in mind global warming is driven by the burning of fossil fuels, we cannot overlook the fact of the heavy contributions from the routine flaring of gas associated with crude oil extraction. Researchers have shown a correlation between the productivity of farms and their distance from gas flare stacks. Oil spills and produced water contaminate soils, surface, and groundwater, directly affecting food production and security. With a singular focus on protecting oil pipelines and facilities,

the Niger Delta region has been heavily militarized since the early 1990s, making farming and fishing in the region precarious endeavors in an atmosphere of insecurity.

What do you think is the best path forward for the Niger Delta's communities vis-à-vis forced migration? What might the best responses look like on a local level, government level, and regional level?

The way forward is a complex path. The forced migration currently being witnessed is driven by human insecurity as well as by environmental impunity by multinational oil companies operating in the region. Stopping gas flaring, an act that has been declared illegal since 1984, is key to the restoration of the ecological balance of the Niger Delta. There is also the need to stop the incessant oil spills, embark on a region-wide cleanup and environmental restoration, and demilitarize the area. Ultimately the nation and others on the continent must urgently diversify their national economies, abandon the extractivist pathways, support smallholder farmers and fishers, and promote food sovereignty.

Farmers are concerned about the assault on local food systems and erosion of local biodiversity by the introduction of genetically modified crops into Nigeria. Erosion of crop varieties developed by local farmers over the millennia exposes the system to avoidable risks including that of increased food insecurity.

the foreclosure and real estate crises of the 2000s, and from society more broadly vis-à-vis the exponential growth of the prison population in recent decades.[282]

Like the Global North's experience of austerity, the Global South has experienced its own version of neoliberalization. The imposition of debt repayment priorities and the opening of markets to powerful foreign firms weakened states throughout the Global South. Such measures ultimately impoverished the middle class and undermined local manufacturing, which could not compete with large mass-market foreign firms.[283] These acquisitions were made possible by the explicit goals and unintended outcomes of International Monetary Fund and World Bank restructuring programs implemented in much of the Global South in the 1970s, as well as the demands of the World Trade Organization from its inception in the 1990s and onward. Saskia Sassen, sociologist of globalization and migration, argues the resulting mix of constraints and demands "had the effect of disciplining governments not yet fully integrated into the regime of free trade and open borders, and led to sharp shrinkage in government funds for education, health, and infrastructure."[284]

Like austerity in the Global North, these dynamics across the Global South have precipitated their own removals, exclusions, and limits on mobility. Specifically, neoliberalization across the Global South has produced and exacerbated local, national, and regional resource and power conflicts. Oftentimes taking the form of war, disease, and famine, these conflicts are significant proximate causes of displacement.[285]

The links between the climate crisis, climate-induced migration, and neoliberalization are apparent in the effects that deregulation and privatization of state sectors and industries have had on the Global South in the late 1970s. These measures have contributed to the long-standing underdevelopment of national economies and industries, thus helping decrease resilience to the climate crisis. Specifically, they have not only helped increase poverty and undermine the development of adequate infrastructure that might help communities cope. They have also reentrenched North-South relations of dependency that have forced many such countries into deriving a relatively large percentage of their GDP from agriculture, forestry, and fishing, which are by nature more vulnerable to a changing climate.[286]

As of 2015, an estimated 79 percent of those experiencing poverty live in rural areas, with most rural people relying on activities within food systems—most prominently primary production—for their livelihoods.[287] As such, a large major-

ity of the world's poor depend on moderate seasonal changes to produce their food. Yet with strengthened natural disasters and unpredictable weather patterns—hotter days, drier seasons, more flooding, and shorter growing seasons—such communities are losing one of their few assets, knowing when to sow and harvest.[288]

Neoliberalization has exacerbated the pressure of the climate crisis on already-fragile low-income rural economies.[289] Current trends of climate-induced displacement and the challenges of resettlement can only be expected to worsen. For example, Somalis have temporarily resettled in Kenya and Ethiopia; citizens of island states, such as Tuvalu, Nauru, and Kiribati, have tried to relocate to Australia and New Zealand; and Bangladeshis have resettled in India and Nepal.[290] All of these migrants are not granted legal status and are either eventually deported or remain as undocumented immigrants.

Additionally, there is evidence to suggest that internal migration due to the climate crisis may ultimately create more economic and political refugees. The former UN high commissioner for refugees, Antonio Gutierrez, stated that "climate refugees can exacerbate the competition for resources—water, food, grazing lands—and that competition can trigger conflict."[291] Hence, climate crisis migration can cause population pressures, landlessness, rapid urbanization, and unemployment, which put refugees in danger of backlash and worsen existing urban struggles.

"Petro-Persecution" and Securitization

The second dynamic of transnational "persecution" specific to the present-day system of a capitalist world economy is securitization, which is intimately linked with the first dynamic of neoliberalization. During the past several decades, the role of the state has been redrawn to furnish a conduit for the more rapid distribution of what were once "public goods" into the hands of corporations and other private interests.[292] Such demands that capital has placed upon states within both the Global North and the Global South have led to security concerns and the need for the state-led management of such concerns.[293] Specifically, neoliberalization has brought with it not only austerity in the Global North and debt in the Global South, but also the paired dynamic of "securitization"—new strategies and efforts by states to manage the expulsions, and resource and power conflicts that have followed therefrom.

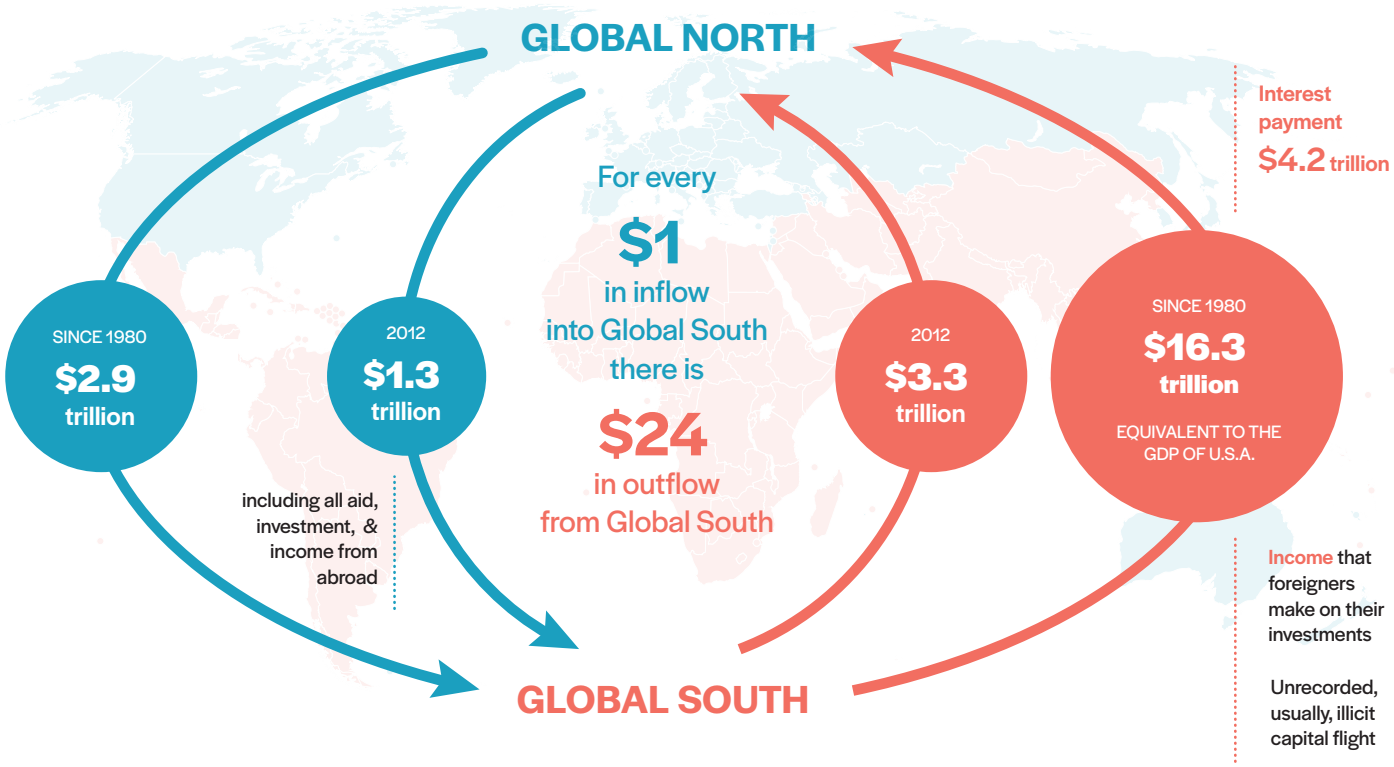
Like neoliberalization, the dynamic of securitization has developed across the Global North and the Global South in different ways, shaping contemporary removals, exclusions, and limits on mobility within and across each. And like neoliberalization, the dynamic of securitization offers some coherence to the reluctant, provisional, and seemingly arbitrary nature of resettlement today.

Across each hemisphere there has been no shortage of examples of the pairing of neoliberalism's austerity and debt regimes, and new security concerns and claims on mobility to deal with the expulsions born of such regimes: Greece's financial crisis and the disputes over polices pushed for from the European Commission, the European Central Bank, and the International Monetary Fund, alongside what Human Rights Watch has described as the growing crisis of xenophobic violence toward immigrants and political refugees across the country; the British austerity narrative promoted by the Conservatives, alongside policies and bills preventing terrorism, such as the government's Draft Investigatory Power Bill; and the growing use of force by state actors, such as deploying housing eviction officers, and growing control of citizen participation initiatives, such as neighborhood renewal partnerships in the United Kingdom and the United States, or citizen security programs across Latin America where police are key partners.[294]

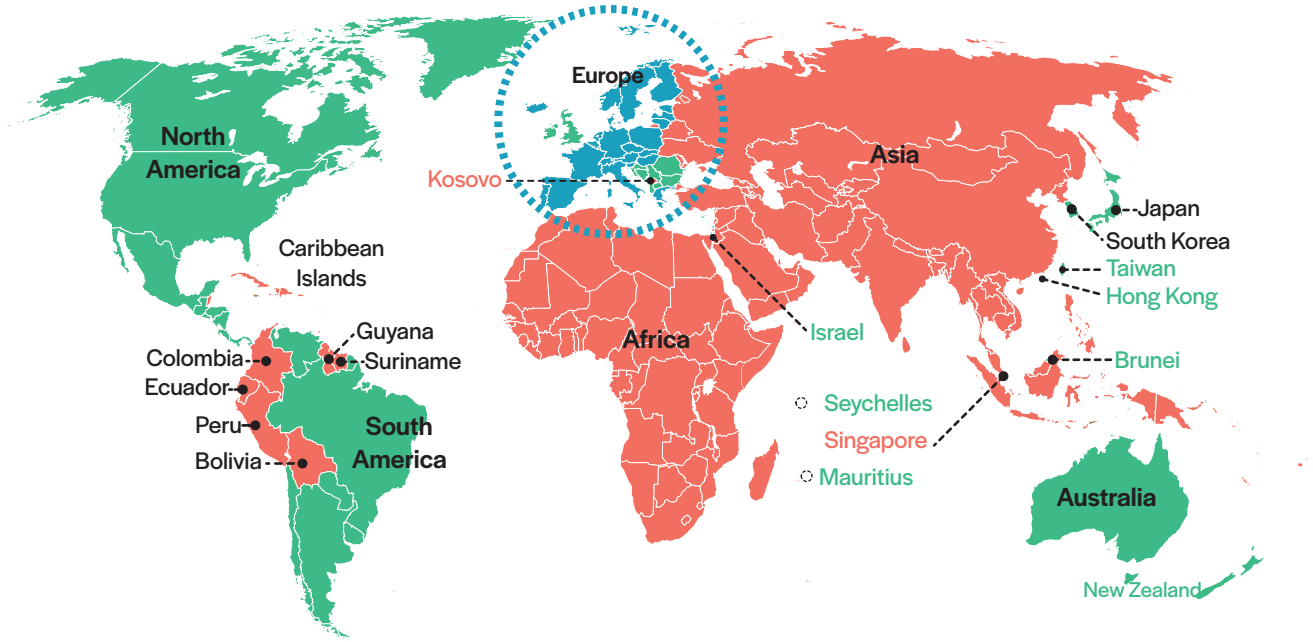
The links between the climate crisis, climate-induced migration, and securitization are apparent in that military institutions have been playing an increasingly prominent part in the governing of environmental concerns and that the climate crisis is being used by the military, researchers, politicians, and others to prop up the national security state. For example, on July 27, 2008, the Center for a New American Security (CNAS), alongside the US military, scientific institutes, public policy institutes, private corporations, national funding agencies, and news agencies, carried out a two-day, new type of military exercise called the "Climate Change War Game." The exercise was intended "to explore the national security consequences of climate change." The CNAS was perhaps the first in a growing number of "homeland security" institutions involved in environmental changes and the conflicts and displacements that have followed.[295]

More recently, a January 2019 US Department of Defense report, entitled "Report on Effects of a Changing

Easing Capital Flow and Restricting People Movement



Source: "Financial Flows and Tax Haven: Combining to Limit the Lives of Billions of People" (2015)



Citizens of these countries must obtain a (very expensive) visa to enter the Schengen Area of free movement

Citizens of these countries, exempted from visa requirements, can freely enter the Schengen Area simply by presenting an identification document

Source: Interior Ministry; EUR-Lex database of the European Union; From a suggestion by Oliver Clochard, Migreurop

Climate to the Department of Defense," found that the climate crisis threatens a majority of mission-critical military bases. In its assessment of those 79 installations—which included Army, Air Force, and Navy installations—36 are threatened by wildfires, 43 are threatened by drought, and 53 are threatened by flooding. The report ultimately found that the effects of a changing climate pose a national security issue with potential impacts to Department of Defense missions, operational plans, and installations.[296]

Concerns of destabilized national borders, cascading violence, and mass migrations brought by the climate crisis, and the effects of the climate crisis on US military infrastructure, have been used to prop up US extraterritorial sovereignty. Such concerns are also driving the intranational contraction of US political subjects and spaces through increasingly militarized borders, fewer resettlements, criminalization of immigration, and limited refugee protections fueled by anxieties that more of those displaced peoples will reach the United States.[297] For example, the Department of Defense's "Climate Change Adaptation Roadmap 2014" states these concerns in detail:

> "The impacts of climate change may cause instability in other countries by impairing access to food and water, damaging infrastructure, spreading disease, uprooting and displacing large numbers of people, compelling mass migration, interrupting commercial activity, or restricting electricity availability. These developments could undermine already-fragile governments that are unable to respond effectively or challenge stable governments, as well as increasing competition and tension between countries vying for limited resources. These gaps in governance can create an avenue for extremist ideologies and conditions that foster terrorism."

The report continues, stating, "Here in the US, state and local governments responding to the effects of extreme weather may seek increased Defense Support to Civil Authorities"—the process by which US military assets and personnel can be used to assist in missions normally carried out by civil authorities. Thus, as the climate crisis affects the availability of food and water, human migration, and competition for natural resources, the report states that the "Department's unique capability to provide logistical, material, and security assistance on a massive scale or in rapid fashion may be called upon with increasing frequency"—domestically and abroad.[298]

This drive for a resilient and prepared military presence in response to natural disasters and long-term environmental change goes hand in hand with an already-escalating presence on the border. For example, as of 2019, the Pentagon has been preparing to loosen rules that bar troops from interacting with migrants entering the United States, expanding the military's involvement in migration from across the southern border. Specifically, senior defense officials have recommended that acting defense secretary Patrick Shanahan approve a new request from the Department of Homeland Security to provide military lawyers, cooks, and drivers to assist with handling a surge of migrants along the border.[299]

This drive for a resilient and prepared military presence in response to natural disasters and long-term environmental change goes together with lasting integration between border enforcement and military forces. For example, through its Citizenship and Immigration Services (USCIS) branch, the Department of Homeland Security is the primary agency responsible for the security vetting of refugee applicants.[300] USCIS makes the final determination on whether to approve resettlement applications, and its security review uses the resources and databases of numerous other national security agencies, including the National Counterterrorism Center, Federal Bureau of Investigation, Department of Defense, and multiple US intelligence agencies.

The Way Forward

"Petro-persecution" accounts for the source of "persecution" as the dependence of entire economies, industries, and industrial processes upon fossil fuels (e.g., industrial agriculture, steel production, and other manufacturing). Oriented around an understanding of "petro-persecution" as fundamentally deterritorialized (and not limited to one's country of origin), international refugee law might instead center the ability or inability of a nation-state to protect its own people from the effects of the climate crisis. Likewise, resettlement or funding for resettlement might be weighted toward wealthier nations and nations most resilient to the effects of the climate crisis, especially if such wealth were procured through exploitative fossil fuel extraction, refining, and distribution itself.

What is required is a new international convention that recognizes climate refugees and establishes comprehensive and legally binding protections. Yet articulating new and revised approaches, strategies, and instruments around such an understanding of "persecution" under the global climate crisis first requires an account of existing approaches to climate-induced migration within national bodies and international bodies. The creation of a new refugee convention, the Convention Relating to the Status of Climate Refugees, or the revision of the 1951 Refugee Convention must follow from this key development in our understanding of the issue at hand.

Existing Approaches to Climate-Induced Migration

National Bodies and Climate-Induced Migration

Many countries have included provisions on assistance and protection for persons affected by natural disasters in their country, including IDPs, in their disaster management legislation. For disaster-induced cross-border displaced persons, some states have enacted systems of temporary or subsidiary protections. For example, the US Immigration and Nationality Act provides for the possibility to grant Temporary Protection Status (TPS) for nationals of a foreign state in the following cases: 1) there has been an environmental disaster in the foreign state resulting in a substantial, but temporary, disruption of living conditions;[377] 2) the foreign state is unable, temporarily, to handle adequately the return of its own nationals; and 3) the foreign state officially has requested such designation.[378]

One benefit of TPS is the ability to extend protections for a country based on their recovery progress. For example, there are 57,000 Hondurans and roughly 2,550 Nicaraguans with TPS, as of 2018 estimates. Immigrants from Honduras and Nicaragua who qualify for TPS must have been living in the United States as of December 30, 1998, following Hurricane Mitch, which killed more than 5,600 people in Honduras and more than 3,000 in Nicaragua, and caused damages of $5 billion and $1.3 billion, respectively.[379] Although a series of environmental disasters—including storms, earthquakes, and a volcanic eruption—have hampered recovery efforts, the Department of Homeland Security said in a 2017 announcement that conditions in Nicaragua had improved enough that the TPS designation would be terminated in January 2019. As a result of an injunction by a US district court, however, the end date for TPS for the country has been extended to January 2020.[380]

The primary shortcoming of TPS, however, is the sometimes arbitrary nature of its activation and deactivation. For example, in other disasters of similar severity, including the devastating 2008 floods in Haiti, this system was not activated.[381] Likewise, TPS for Nicaragua would not have been extended were it not for the US district court's intervention.

In some cases of climate-induced displacement, some states have admitted and received displaced persons through humanitarian visas. In June 2014, a New Zealand court decision allowing a family from Tuvalu to remain in the country was initially seen as the first legal recognition of climate refugees, yet the family was permitted to stay based on humanitarian grounds and not through protection under refugee or human rights law. The family argued that they should be granted refugee status because their ability to provide for their family was hindered by the scarcity of land and fresh drinking water in Tuvalu due to the climate crisis. Yet the court allowed the family to stay because they had strong family ties within New Zealand.

The decision highlighted two limits of such humanitarian approaches to climate-induced displacement. First, although the New Zealand court determined that it is possible that natural disasters could create a humanitarian situation, it rejected the family's claims concerning the role of the climate crisis.[382] Second, the ruling was "discretionary," neither creating an obligation for any other country nor creating any legal precedent, even in New Zealand.

Regional Bodies and Climate-Induced Migration

The United Nations and other regional bodies, such as the Association of Southeast Asian Nations, African Union, European Union, and Organization of American States, have pursued various mitigation and adaptation strategies to respond to the climate crisis—albeit with agreements that are insufficiently compulsory and legally binding. Each has recognized to some degree that "persecution" under the climate crisis needs to be recognized as a regional and global dynamic, and accounted for as such within mitigation and adaptation strategies

for the climate crisis. This is true in terms of the exploitation and manufactured vulnerability of the world's most marginalized peoples in their home countries, as well as their subsequent displacement and need for safe and adequate sites for resettlement.

Association of Southeast Asian Nations

The Asia-Pacific region is considered the most at-risk part of the world, given its low-lying coastal regions and islands, and the high population density in such areas. As humanitarian and human rights discourse increasingly turned to the issue of internal displacement in the 1990s, some of the world's largest populations of IDPs were also identified in Association of Southeast Asian Nations (ASEAN) member states (e.g., Myanmar, Indonesia, the Philippines).[383] More recently, the region has seen the large-scale displacement of peoples in the wake of severe weather and other types of natural disasters (e.g., the Indian Ocean tsunami in 2004, Cyclone Nargis in 2008). At the same time, the climate crisis is expected to put many people living downstream of the Himalaya-Hindu Kush mountain range—from 39 million to 812 million South Asians—at risk of water stress.

In the early twenty-first century, despite the looming risks of increased flooding, sea-level rise, and water stress, ASEAN continues to lack comprehensive regional frameworks or related mechanisms to regulate the treatment of refugees, let alone their "in-country" counterparts, IDPs. Few ASEAN member states have signed the 1951 Refugee Convention, including the two key receiving countries, Malaysia, and Thailand. Moreover, the wider context of weak and institutionalized regional cooperation and a patchwork of intraregional protocols and bilateral agreements have not lent themselves to the articulation of an ASEAN protection regime focused on the rights and needs of displaced populations.[384]

Despite gaps in formal protections and regional arrangements, there is a long-standing regional practice of informal arrangements that allow for large numbers of displaced persons to carve out some form of refuge. This is the case even in the borderlands and urban areas of states that have not signed the convention (e.g., Malaysia and Thailand). Some government officials have also shown an interest in humanitarian practices and institutions, whether in response to a particular refugee or internal displacement crisis, or in meetings and workshops, including with representatives of the UN High Commissioner for Refugees. Examples of such best practices are numerous: the Inter-Governmental Asia-Pacific Consultations on Refugees, Displaced Persons and Migrants, or the Asia-Pacific Consultations on Refugees, Displaced Persons and Migrants, which has met annually since 1996.

Governments across the Asia-Pacific region have also explored possibilities for greater cooperation to combat specific aspects of irregular migration, such as migrant smuggling and human trafficking (e.g., the so-called Manila Process). In this regard, the 1998 adoption of the Bangkok Declaration on Irregular Migration provided a common basis for law enforcement cooperation in a region in which very few states have signed the UN Protocol against Migrant Smuggling.[385]

ASEAN member countries have also excelled at disaster relief. Concerning the recent humanitarian assistance in Southeast Asia, ASEAN's role became visible with the Cyclone Nargis flooding in Myanmar: all ASEAN member countries provided disaster relief materials to the cyclone-affected areas based on the ASEAN Agreement on Disaster Management and Emergency Response.[386] Furthermore, an ASEAN Emergency Rapid Assessment Team was deployed, comprising government officials, disaster experts, and nongovernmental organizations from the ASEAN countries.[387]

African Union

Over the past several decades, displacements have reached daunting proportions in Africa, particularly sub-Saharan Africa. According to Francis Deng, the first representative of the UN Secretary-General on

IDPs, between 1969 and 1994, the number of IDPs in Africa soared to between 10 million and 15 million. In 1994, the long-standing and alarming increase in IDPs prompted the Organization of African Unity to state that internal displacement is "one of the most tragic humanitarian and human rights crises in Africa today."[388] These trends continue today, with the climate crisis increasingly recognized as a determining factor in such displacement and migration. Of the total number of IDPs, 30 percent originate from African nations (12.4 million), and of the total 3.5 million new internal displacements in Africa in 2015, 1.1 million were triggered by rapid-onset natural disasters (principally floods).[389]

The African Union's targeted response to the international IDPs crisis has illustrated the capacity for such frameworks to be configured in ways that ameliorate climate-induced displacement. In the context of such historic and ongoing displacement across the continent, in 2009 African leaders within the African Union adopted the Convention for the Protection and Assistance of Internally Displaced Persons of Africa, conventionally known as the Kampala Convention—the first legally binding international instrument on IDPs.

The Kampala Convention designates the state as the primary actor in addressing and mitigating internal displacement in collaboration with civil society and humanitarian organizations. The convention creates a legally binding definition for IDPs that is identical to the guiding principle's definition and requires that states provide IDPs with legal documentation. Furthermore, the convention includes state obligations for the prevention of internal displacement, for protection and assistance during displacement, and for the creation of durable solutions and compensation. The agency of IDPs is emphasized throughout the Kampala Convention's obligations, stating that IDPs must be consulted and allowed to participate in decisions about protection and assistance during displacement and be involved in the decision-making of whether they will be returned, locally integrated, or relocated.

While the provisions of the Kampala Convention are extensive, implementation remains uneven—25 states have ratified the convention while 18 have signed but not ratified it.[390]

Those states that have implemented the Kampala Convention—and even states that have been inspired by the convention but have not yet signed or ratified it—have established clear examples of good practices. Long before the Kampala Convention was created, Uganda was a pioneer in such efforts, adopting the National Policy for Internally Displaced Persons in 2004. In Somalia and Mali, the convention has helped widen the scope of consultation among international partners to develop national laws and policies. Although Kenya is not yet a party to the Kampala Convention, it has developed and adopted a comprehensive framework to address displacement issues. Likewise, Burundi is not yet a party to the convention, yet the 2000 Arusha Peace and Reconciliation Agreement includes multiple provisions relating to internal displacement that are consistent with it (e.g., guaranteeing access to people in need and the security of international personnel and provision of humanitarian aid).[391]

Ultimately, while several states have adopted domestic laws and policies to incorporate the convention's obligations (explicitly or not) , more action is needed, and insufficient resources are currently being allocated to the implementation of policies.

European Union

Between 2000 and 2014, weather variations in 103 source countries translated into asylum applications to the European Union, which averaged 351,000 per year. A December 2017 study by Columbia University climate researchers projected that as global temperatures continue their upward march, applications for asylum to the European Union could increase 28 percent to nearly 450,000 per year by 2100.[392] The Global Compact on Refugees is an intergovernmentally negotiated agreement prepared under the auspices of the United Nations. A blueprint for governments, international organizations, and other stakeholders to ensure that host communities and refugees alike get adequate support, the agreement was formally endorsed by the UN General Assembly on December 17, 2018. Likewise, the Global Compact for Migration—which describes itself as covering "all dimensions of international migration in a holistic and comprehensive manner"—was formally endorsed by the UN General Assembly on December 19, 2018.[393]

Both compacts do make some reference to the climate, yet the refugee compact stops short by regarding climate simply as one of many factors that "may interact with the drivers of refugee movements." Conversely, the final draft of the migration compact calls on UN members to "better map, understand, predict

and address migration movements, including those resulting from sudden- and slow-onset natural disasters, environmental degradation, the adverse effects of climate change" and "cooperate to identify, develop and strengthen solutions, including planned relocation and visa options" for climate migrants.[394]

However, against calls for the compact to recognize climate refugees and thus make specific demands for their protections, Louise Arbour, the UN official leading the latter compact, told the European Union that the document would not grant "specific legal international protection to climate-induced migrants."[395] Regardless, both agreements are voluntary in nature and not legally binding instruments. Despite such progress, the United Nations and other regional bodies, such as the European Union, African Union, ASEAN, and Organization of American States, and others need to further pursue vigorous adaptation strategies for climate refugees through agreements that are compulsory and legally binding.

Organization of American States

In the Americas, the nonbinding Cartagena Declaration on Refugees, crafted in 1984 in response to the wars in Central America, sets regional standards for providing assistance not just for those displaced by civil and political unrest but also those fleeing "circumstances which have seriously disturbed the public order." The Organization of American States (OAS) has also passed a series of resolutions offering member states additional guidance on how to respond to refugees, asylum seekers, stateless persons, and others in need of temporary or permanent protection.[396]

In 2016, the OAS released a report entitled, "Climate Change: A Comparative Overview of the Rights Based Approach in the Americas." The report dedicated little to the issue of climate-induced migration, though what connections it did make did so through human rights frameworks. The report stated that the biggest threats to the "right to inviolability of the home" (Article X) are "sea level rise claiming beach homes and homes in close proximity to flood plains, changes in living stock and quality of resources; clean/quality water availability diminished causing forced displacement; floods, hurricanes, cyclones and landslides causing forced displacement; risk of urban floods in riverine and coastal areas, inducing property and infrastructure damage in North America." Beyond such recognition of the relationship between the climate crisis and human migration, and the threats to human rights, OAS efforts have remained limited.

International Bodies and Climate-Induced Migration

International Climate Crisis Negotiations

A result of the 2010 Cancún Climate Change Conference was Article 14 of the Cancún Agreements: Outcome on Long-term Cooperative Action, under the UNFCCC, which invited states to enhance action on adaptation.[397] The meeting and article were important because it was the first time that the international community officially recognized the humanitarian consequences of climate crisis-related population movements as an adaptation challenge. Echoing Cancún, in 2011, the Norwegian government, in partnership with the Norwegian Refugee Council and the Centre for Climate and Environmental Research, hosted the Nansen Conference: Climate Change and Displacement in the 21st Century. During the event, civil society, nongovernmental organizations, international organizations, private sector, and other parties convened for two days to discuss climate-induced migration.

After 16 years of avoiding mentioning the topic altogether in the UN Climate Change Conference (COP), climate-induced displacement was firmly addressed by the parties within the 2015 COP21 decision adopting the Paris Agreement (rather than the treaty itself).[398] Under the heading of "loss and damage," the decision declared the need to establish a task force "to develop recommendations for integrated approaches to avert, minimize, and address displacement related to the adverse impacts of climate change."[399]

At COP24, countries "welcomed" the guidelines set forth by the task force and agreed to include them in their final report. They also agreed to let the task force continue its work on displacement indefinitely—a symbolically important gesture and one that will make it easier to hold governments accountable in the future.

Agriculture, Decarbonization, and the Climate Crisis

An instrumental part of addressing the crisis of climate-induced migration is addressing the climate crisis itself. Across industry, transportation, electricity, and other economic sectors, confronting the climate crisis requires the decarbonization of energy, the democratization of ownership and distribution of energy, and the decommodification of energy (i.e., clean, renewable energy as a human right). Not without challenges, national, regional, and international organizations and actors have begun taking steps to tackle manufacturing, mining, agriculture, construction, and other parts of the industrial sector dependent upon fossil fuels and contributing to the climate crisis.

After six years of deadlock, parties at the 2017 UN Climate Change Conference (COP23) reached an agreement on agriculture—the Koronivia joint work on agriculture (KJWA), which officially acknowledges the significance of the agriculture sectors in adapting to and mitigating the climate crisis. For the precarious economies of the Global South and the millions whose livelihoods are in agricultural production, this agreement is historic. Ultimately, the Paris Agreement and the KJWA, with their emphasis on country-driven action, have provided a platform to highlight the technical and financial gaps and needs that are standing in the way of action and ambition to address climate crisis challenges in agriculture.[417]

The Food and Agriculture Organization (FAO) and other actors at international and national level, have partnered with one another to support the development and implementation of the KJWA. Southeast Asian countries have highlighted climate crisis adaptation and mitigation in agriculture as a top priority for implementation of the Paris Agreement and their Nationally Determined Contributions. Specifically, under the banner of ASEAN, countries in the region have recognized the growing attention to agriculture under the UNFCCC, and the KJWA in particular, as a major opportunity to put forward a collective and influential voice for climate action in this crucial sector. It is with this in mind that ASEAN member states have formally established the ASEAN Negotiators Group on Agriculture. Their hope is that advancement in high-tech fields, including GPS, artificial intelligence, and global connectivity, can produce higher yields and stabilize food supply during a period of climate uncertainty.[418]

By mainstreaming agriculture into the UNFCCC processes, the KJWA will contribute to achieving the objectives of the convention by harnessing synergies between adaptation and mitigation in the agriculture sector. The African Group of Negotiators Expert Support team—with technical and financial support from a number of other African groups—provided critical support to work leading to the adoption of the KJWA. They did so by offering several recommendations, which were incorporated into the KJWA. These include funds set aside by the UNFCCC to support the implementation of agriculture activities, increased international cooperation and partnerships for capacity building and technology development and transfer, progress indicators, vulnerability assessments, and linkages with the FAO, International Fund For Agricultural Development, and the World Bank to create a platform that will enable efforts from these organizations to feed directly into UNFCCC processes.[419]

Similarly, the European Union, alongside the African Group, proposed institutionalizing the involvement of the constituted bodies within the KJWA process.

International Human Rights and Security Negotiations

Climate crisis-related security challenges have been addressed by the UN Security Council (UNSC) and used as a means to promote migrant rights and protections. Small island developing states (SIDS) were among the first to push for this agenda, as rising sea levels pose a direct threat to their existence, which could, inter alia, lead to territorial disputes and puts military bases at risk.[400] When SIDS first discussed the climate crisis at the UNSC in 2007, it was seen as a "socioeconomic development issue" appropriate for the UN General Assembly and the UNFCCC.[401] In 2009, the UN General Assembly requested the UN Secretary-General to submit a comprehensive report to the assembly on the possible security implications of the climate crisis.[402] The report highlighted the security implications of the climate crisis and the relevance of population movements in particular.

In 2011, the UNSC considered the impact of the climate crisis under the item "maintenance of international peace and security." While not directly referring to population movements, the UNSC expressed its concern over the potential of adverse climate crisis impacts, including those related to loss of territory, aggravating existing threats to international peace and security. In 2015, during the open UNSC debate on peace and security threats to SIDS, China acknowledged that SIDS are experiencing "non-traditional security threats," and in 2017, Russia acknowledged the climate crisis in specific conflict regions, such as Lake Chad.[403]

However, after a decade of efforts, the SIDS campaign and other campaigns did not translate to a meaningful resolution, nor international legal norms designed to account for the disappearance of nations because of environmental processes or acknowledge climate or environmental refugees altogether.[404] Ultimately, the security aspect of climate-induced migration should be used to promote the rights and protections for migrants and not to erode their rights, exacerbate their vulnerability, or limit their mobility.[405]

There have been other positive moves toward the recognition and protection of climate refugees within the UN Human Rights Council (UNHRC). In 2008, the UNHRC recognized that the human being is the center of sustainable development, and the right to development must be viewed in the context of fulfilling the needs of future generations. A year later, the council adopted another resolution where it acknowledged the impact of the climate crisis on human rights. In this particular resolution, the council noted the challenges that the climate crisis poses to the fulfillment of Millennium Development Goals and the eradication of poverty.[406] It pointed out that the climate crisis impacts rights such as the right to life and the right to adequate food, especially of the most vulnerable people of the society.[407]

In July 2017, the UNHRC resolution 35/20 requested that the UN High Commissioner for Refugees "organize an intersessional panel discussion prior to the commencement of phase II of the intergovernmental process leading to the global compact on safe, orderly and regular migration, with the theme 'Human rights, climate change, migrants and persons displaced across international borders.'"[408] The panel discussion set out to "identify opportunities for States, civil society and other relevant stakeholders to facilitate the protection and fulfillment of the human rights of migrants in the context of the adverse impacts of climate change," and to "contribute to relevant processes that address migration in the context of climate change," including the stocktaking efforts for the global compact on safe, orderly, and regular migration and the work of the Task Force on Displacement (TFD) under the UNFCCC.[409]

International Migration and Development Negotiations

The Office of the UN High Commissioner for Refugees (UNHCR) has highlighted the legal gap for cross-border displaced persons for several years. The existence of such a gap was again recognized at the 2010 Dialogue of the High Commissioner on Protection Challenges.[410] The UNHCR was also addressing the protection gap in the area of cross-border movement in the context of the 2011 commemorations of the 1951 Refugee Convention and 1961 Statelessness Convention. Presently, the UNHCR plays a leading role in the Global Protection Cluster for protecting and assisting people who are forcibly displaced inside their countries and cannot return safely home.[411] The UNHCR is also a standing invitee to the Steering Group of the Platform on Disaster Displacement—a state-led initiative focused on the implementation of the Nansen Initiative's Protection Agenda.

Further, the UNHCR has developed planned relocation guidance together with Georgetown University and other partners for the relocation of at-risk populations

to protect them from disasters and the impacts of the climate crisis while respecting their human rights.[412] In 2018, in the implementation of the Workplan of the TFD, the UNHCR pushed to map existing international and regional guidance and tools aimed at addressing the adverse impacts of the climate crisis, including its effect on migration, while accounting for the adverse effects of the climate crisis that were presented at COP24 and adopted by parties.[413]

Throughout, the UNHCR has provided technical support to the UNFCCC process since 2008, including through the Advisory Group on Human Mobility and Climate Change and in its role as a member of the TFD mandated by the Executive Committee of the Warsaw International Mechanism on Loss and Damage.[414]

Likewise, the 2018 UN Global Compact for Safe, Orderly, and Regular Migration reaffirmed the New York Declaration for Refugees and Migrants and expanded it to account for migration driven by "natural disasters, the adverse effects of climate change, and environmental degradation"—the first UN compact to recognize the climate crisis as a driver of migration. Specifically, Objective 2 on addressing drivers of migration contains a subheading specific to disasters, the climate crisis, and environmental degradation, and calls to "develop adaptation and resilience strategies" to disasters and adverse effects of the climate crisis that take into account migration; to "integrate displacement considerations into disaster preparedness strategies"; to address the vulnerabilities of persons affected by disasters and provide them with the necessary humanitarian assistance; and to "develop coherent approaches" to address the challenges of migration and displacement.

Although the United Nations had proposed the compact (alongside the Global Compact on Refugees) as a vehicle to address the large movements of forced migrants, and although the compact was a nonbinding document during the negotiation process, there was major resistance to the compact taking up climate. For example, Vera Songwe, Executive Secretary of the Economic Commission for Africa, acknowledged the "significant contributions and proposals" from the Africa Group, including protection gaps and vulnerabilities related to disasters and climate-induced migration, which was included as a separate objective as proposed by the Africa Group.[415] Indeed, the Africa Group, countries in the Pacific, and some Latin American countries all pushed to have a distinct objective on the climate crisis and displacement and threatened to pull out without the inclusion of one.

Beyond Objective 2 and its dedicated engagement with climate, Objective 5 on enhancing availability and flexibility of pathways for regular migration is highly relevant for climate-induced displacement across borders. It calls on states to develop and use practices such as humanitarian visas or temporary work permits for persons displaced by sudden-onset disasters, and planned relocation or visa options for those crossing borders due to slow-onset events. Together, these provisions outline a vision of what needs to be done, and a basis for concrete action at domestic, regional, and international levels. According to Walter Kälin, Envoy of the Chair, "the most important part of the Compact are the provisions on implementation and follow-up." In this regard, a so-called connection-hub will be created within the United Nations as a capacity-building mechanism.[416]

Approaches and Strategies

THE USE OF FOSSIL FUELS and other sources of greenhouse gas emissions have been transforming the earth's climate and putting the world's most vulnerable communities at risk. Such "petro-persecution" born of our global dependence on petroleum, coal, natural gas, and other fossil fuels, and the global investment patterns behind this dependence, puts pressure on countries to protect their communities from climate impacts. This is a nearly impossible endeavor across the Global South, especially when it comes to island nations threatened by sea-level rise and climate-vulnerable periphery nations that have long been forced into labor-intensive production and extraction of raw materials for the Global North.

Through militarized borders, the criminalization of migration, fewer resettlements, and limited refugee protections, climate refugees also experience "petro-persecution" when it comes to the process of resettlement itself, especially from across the Global South to the Global North.

This report offers several recommendations concerning international and intranational refugee law and resettlement strategies, centering "petro-persecution" as a form of "persecution" not bound by national borders or originating solely from within one's nation of origin.

Policy Intervention 1

Legal Recognition of "Climate Refugees" via a Convention Relating to the Status of Climate Refugees or Amendment to the 1951 Refugee Convention

1.1. Context

Although the expression "climate refugees" is often used in relation to forced migration in the context of the climate crisis, it is not part of international law. The premier comprehensive and legally binding tool for displaced persons, the 1951 Refugee Convention, does not explicitly recognize environmental and thus climatic factors as criteria to define who is a refugee. Furthermore, the definition of "persecution" itself within the 1951 Refugee Convention is in conflict with the nature of the climate crisis, given the current impossibility of determining the "actor(s)" of persecution and linking their actions/inactions to specific cases of climate-induced displacement.

The core issue here concerns the effectiveness of rights and the legal certainty in the context of climate-induced displacement and the definition of "persecution" upon which such rights must be based.

1.2. Recommendation

This report proposes two possible pathways forward: the creation of a new refugee convention, the Convention Relating to the Status of Climate Refugees, or the amendment of the 1951 Refugee Convention.

Regardless of the pathway forward (other than whichever offers the path of least resistance), the agreement must satisfy two major requirements. It must first qualify individuals and communities that cannot avail themselves of government relief from the effects of the climate crisis as those who are "persecuted" and thus allowed to formally make a claim for asylum in a country of their choosing. Secondly, it must do so without demanding that such status be linked to a specific "actor" of persecution (whether a private or public entity or agricultural or industrial process). Under either agreement, and in conjunction with the existing circumstances covered under the 1951 Refugee Convention, "climate refugees" would be guaranteed legal protection as follows:

1. Situations of sudden- or slow-onset disasters (not necessarily linked to the climate crisis) if authorities deny reasonable assistance and protection to certain people because of their race, religion, nationality, membership of a particular social group, or political opinion and as a consequence expose them to treatment amounting to persecution. The same is true where a natural disaster impact meets the threshold of a persecution because it is the consequence of a respective governmental

policy with a discriminatory impact on a specific group of persons possessing such attributes. Such circumstances are covered under the existing 1951 Refugee Convention.

2. Situations of violence, serious human rights violations, or armed conflict triggered by disputes over shrinking natural resources if persecutory measures are based on the race, religion, nationality, membership of a particular social group, or political opinion of affected persons. Such circumstances are covered under the existing 1951 Refugee Convention.

3. Situations where a person—regardless of their race, religion, nationality, membership in a particular social group, or political opinion—fleeing the effects of the climate crisis might be fleeing a nation and government that has not turned against its citizens but rather cannot protect its citizens. Some of the people experiencing the most disastrous effects of the climate crisis are living within nations that have long recognized the issue at hand and that have appealed to the international community for support. The new Climate Refugee Convention or revision of the existing 1951 Refugee Convention would account for this by not demanding identification of a specific "persecutor," especially one internal to one's country of origin.

Policy Intervention 2

Linking Scientific Research on Habitability and Climate-Induced Displacement with National Resettlement Plans

2.1. Context

If one is a refugee, there are three solutions to the persecution one has faced: 1) returning safely and voluntarily to the country one has fled; 2) integrating in the country one fled to; and 3) resettlement to a third country. As of the end of 2015, the median duration of exile stands at four years (i.e., half of the refugees worldwide have spent four years or less in exile) whereas the mean duration stands at 10.3 years.[420] Although the mean duration has been relatively stable since the late 1990s, short- and long-term natural disasters exacerbated by the climate crisis may increase the average duration of exile. Even in the context of short-term natural disasters (e.g., storms, floods, fires), the devastation may be long-lasting.

Under the climate crisis, there is the added challenge that such disasters are likely strengthening and increasing in frequency. Long-term natural disasters (e.g., sea-level rise and desertification) may mean there is advance warning of displacement, though the risk of extended exile remains that much greater due to potentially permanent environment change and outright land loss. Thus, the challenge is determining the extent to which people who flee from a short-term natural disaster are obliged to return once the danger has passed and the devastation cleared, and the extent to which people need to flee from an impending long-term natural disaster.

The primary legal impediment to the forced return of people in such circumstances is whether, in forcing return, the host state would expose the individual to such risk again in the near future or to a place where one's livelihood is impossible to recover altogether.[421]

2.2a. Recommendation

Scientific knowledge is inherently limited concerning efforts to link the actions of emitters and industries to specific cases of climate-induced displacement in the granting of refugee status.

This report recommends strengthening existing research agendas on the likelihood that the natural disaster in question would recur and strengthen under the climate crisis, as well as scientific research on the long-term transformations a specific region will experience. Specifically, this report recommends strengthening the Warsaw International Mechanism regarding Climate Loss and Damage, which addresses loss and damage associated with the adverse effects of the climate crisis in a comprehensive, integrated, and coherent manner by undertaking, inter alia, the following functions:

- enhancing knowledge and understanding of comprehensive risk management approaches to address loss and damage associated with the adverse effects of the climate crisis, including slow-onset impacts;

- strengthening dialogue, coordination, coherence, and synergies among relevant stakeholders;
- enhancing action and support, including finance, technology, and capacity building, to address loss and damage associated with the adverse effects of the climate crisis, so as to enable countries to undertake actions; and
- strengthening the Warsaw International Mechanism regarding Climate Loss and Damage to aid the pooling of scientific knowledge and resources concerning the duration, intensity, and frequency of short- and long-term natural disasters and their impacts.

2.2b. Recommendation

This report recommends strengthening existing links between the Warsaw International Mechanism regarding Climate Loss and Damage and the Task Force on Displacement (TFD), which is designed to develop recommendations for integrated approaches to avert, minimize, and address displacement related to the adverse impacts of the climate crisis. A key goal of the TFD is to invite partners and relevant stakeholders to identify capacity needs and support the efforts of developing countries to avert, minimize, and address human mobility associated with the adverse effects of the climate crisis.

This report recommends integrating, within the existing joint efforts between the Warsaw International Mechanism regarding Climate Loss and Damage and the TFD, the resettlement plans of host nations, including plans of forced return.

2.2c. Recommendation

There are a number of practical measures needed to support the development of labor mobility pathways toward the mitigation of climate-induced displacement for climate refugees and receiving countries alike.

This report recommends the establishment of research and policy priorities concerning labor migration within the Warsaw International Mechanism regarding Climate Loss and Damage and the TFD. Such priorities must include:

- strengthening national capacity to support the collection and dissemination of reliable labor market information and analysis of environmental impacts;
- mobilizing national expertise to map climate vulnerabilities at the regional and national levels with a focus on climate-vulnerable sectors and the populations that fill them;
- developing mechanisms, regional standards, and bilateral arrangements to support the portability and recognition of social security arrangements for workers outside their own countries; and
- developing adaptation plans that link the adverse effects of the climate crisis with a greater need for legal, safe, fair, and regular channels for labor mobility.

The high cost of migration makes labor mobility an unfeasible option for the majority of workers in climate-vulnerable communities, particularly in developing countries. For labor mobility to play a role in adapting to the climate crisis, such targeted goals could represent means of reducing costs, securing work and humane working conditions for migrants, and developing the economies of host countries.

Policy Intervention 3

Pooling Funds for Climate-Induced Loss and Damages, and Compensation

3.1. Context

In the context of the climate crisis, there will be increasing pressure placed on the infrastructure designed to manage the environmental change itself in the country of origin as well as asylum, reception, and integration systems in the receiving country. Further, the growth of refugee populations has put pressure on local schools and housing. These various pressures are distributed unevenly across geographies, exposing faults in systems of multilevel migration governance and the disproportionate impact of climate-induced displacement and resettlement around the world.

While there are agencies, tasks forces, commissions, and other transnational bodies tasked with streamlining the

connections between national and local governments, agencies, and organizations, a key issue remains: imposing climate refugee obligations onto the international community would cost a great deal of money because doing so would multiply the number of individuals that could apply for asylum and attain refugee status. Who resettles various populations? Who funds resettlement efforts? Who receives such funds? These questions lay behind the broad-based hesitation of legally recognizing and protecting climate refugees.

3.2a. Recommendation

The Warsaw International Mechanism for Loss and Damage, created in 2013, acknowledges that "loss and damage associated with the adverse effects of climate change includes, and in some cases involves more than, that which can be reduced by adaptation." The Paris Agreement—an agreement within the UNFCCC—provides for the continuation of the Warsaw International Mechanism. However, the agreement explicitly states that its inclusion "does not involve or provide a basis for any liability or compensation." The inclusion of this clause was the condition on which developed countries, particularly the United States, agreed to include a reference to loss and damage, although the United States has since left the agreement.

In order to establish a pathway for international funding of climate crisis mitigation and adaptation (i.e., loss and damage), this report recommends removing this clause within the Paris Agreement, thus reestablishing a basis for liability and/or compensation vis-à-vis the climate crisis.

Additionally, as part of the Warsaw International Mechanism, the TFD is designed to develop recommendations for integrated approaches to avert, minimize, and address displacement related to the adverse impacts of the climate crisis. This report recommends strengthening the links between the Warsaw International Mechanism and the TFD identifying climate-induced displacement as loss and damages and thus a basis for liability and or compensation.

3.2b. Recommendation

The topic of loss and damage first emerged in international climate negotiations as early as 1991, when Vanuatu, speaking on behalf of the Alliance of Small Island States, proposed an international insurance pool to compensate SIDS for damages from rising sea levels.[422]

In order to finance loss and damage, this report recommends the establishment of such an international insurance pool to compensate nations for damages from climate change-induced short- and long-term natural disasters. At the same time, we recommend the establishment of such an international insurance pool to compensate host nations that resettle climate refugees. Thus, two insurance pools for two distinct yet related issues wherein the international community assumes the bulk of fiscal responsibility.

3.2c. Recommendation

Within the loss and damage context, market instruments can be distinguished from "solidarity instruments" based on whether a population at risk or the international community assumes the majority of fiscal responsibility. In general, market instruments place responsibility directly on the communities at risk, for example, by expecting them to pay an insurance premium, whereas solidarity instruments transfer responsibility to the international community, including nations with greater historical responsibility for emissions.[423] Gradually and over time, solidarity-based proposals, including public sector interventions, taxation, and transfers from developed nations to vulnerable countries, have been downplayed, while private sector insurance-type interventions have been given a central role.[424]

This report recommends a clear shift away from market instruments and back toward solidarity instruments, with higher premiums for nations with greater historical responsibility for emissions and the destruction of carbon sinks. Insurance penetration in developing countries remains low, and in poor countries, on average, only 2 percent of total losses owing to weather-related events are insured.[425] In conjunction with historically-specific premiums, this report recommends strengthening the ability of poorer nations to claim losses and receive compensation.

Appendix

Top Fossil Fuel Companies Operating in Africa

Company/ Corporation	Countries of Operation	Industry	Headquarters	Total Revenue in Millions of USD (Year)
TOTAL S.A.	Algeria; Angola; DR Congo; Ivory Coast; Kenya; Libya; Nigeria; Congo; South Africa; Tanzania; Zambia	Oil and Gas Exploration and Production	France	184,106.0 (2018)
Royal Dutch Shell plc	Algeria; Egypt; Gabon; Lesotho; Libya; Morocco; Namibia; Nigeria; South Africa; Tunisia	Oil and Gas Exploration and Production	Netherlands	388,379.0 (2018)
Exxon Mobil Corporation	Angola; Chad; Egypt; Equatorial Guinea; Liberia; Libya; Mozambique; Nigeria; South Africa	Oil and Gas Exploration and Production	United States	279,332.0 (2018)
Afren PLC	DR Congo; Gabon; Ghana; Ivory Coast; Kenya; Nigeria; South Africa	Oil and Gas Exploration and Production	United Kingdom	945.8 (2014)
BP p.l.c.	Algeria; Angola; Egypt; Libya; Mauritania; Senegal	Oil and Gas Exploration and Production	United Kingdom	297,220.0 (2018)
Eni S.p.A.	Egypt; Ivory Coast; Libya; Nigeria; Congo; Togo	Oil and Gas Exploration and Production	Italy	84,475.4 (2018)
Tullow Oil plc	Ghana; Ivory Coast; Mauritania; Namibia; Uganda; Comoros	Oil and Gas Exploration and Production	United Kingdom	1,859.2 (2018)
Perenco S.A.	DR Congo; Egypt; Gabon; Congo; Tunisia	Oil and Gas Exploration and Production	France	228.4 (2018)
Chevron Corporation	Angola; Morocco; Nigeria; Congo	Oil and Gas Exploration and Production	United States	158,902.0 (2018)
China Petrochemical Corporation	Cameroon; Gabon; Mauritius; Nigeria	Oil and Gas Exploration and Production	China	419,428.0 (2018)
Petroliam Nasional Berhad	Burundi; Equatorial Guinea; Mauritania; South Sudan	Oil and Gas Exploration and Production	Malaysia	60,733.7 (2018)
Pharos Energy plc	DR Congo; Egypt; Congo	Oil and Gas Exploration and Production	United Kingdom	160.0 (2018)
Canadian Overseas Petroleum Limited	Liberia; Namibia; Nigeria	Oil and Gas Exploration and Production	Canada	0.098 (2012)
China National Petroleum Corporation	Chad; Mauritania; South Sudan	Oil and Gas Exploration and Production	China	391,522.2 (2018)
Kosmos Energy Ltd.	Ghana; Sao Tome and Principe; South Africa	Oil and Gas Exploration and Production	United States	894.7 (2018)
Marathon Oil Corporation	Egypt; Equatorial Guinea; Libya	Oil and Gas Exploration and Production	United States	5,844.0 (2018)
PJSC LUKOIL	Ghana; Guinea; Sierra Leone	Oil and Gas Exploration and Production	Russia	125,827.2 (2018)
Repsol, S.A.	Libya; Mauritania; Tunisia	Oil and Gas Exploration and Production	Spain	48,019.8 (2018)
Shumba Energy Ltd	Botswana; Mauritius; South Africa	Coal and Consumable Fuels	Mauritius	0.734 (2019)
Sonatrach Spa	Algeria; Libya; Niger	Oil and Gas Exploration and Production	Algeria	36,765.6 (2017)
Vitol Holding II S.A.	Ghana; Mauritius; Congo	Oil and Gas Exploration and Production	Luxembourg	N/A
African Energy Resources Limited	Botswana; Zambia	Coal and Consumable Fuels	Guernsey	0.122 (2016)
Anglo American plc	Botswana; South Africa	Coal and Consumable Fuels	United Kingdom	27,610.0 (2018)
Areva SA	Niger; South Africa	Coal and Consumable Fuels	France	11.019 (2016)
BASF SE	Egypt; Libya	Oil and Gas Exploration and Production	Germany	69,063.4 (2018)
BHP Group	Namibia, South Africa	Oil and Gas Exploration and Production, and Coal and Consumable Fuels	Australia	44,609.0 (2019)
Canadian Natural Resources Limited	Ivory Coast; South Africa	Oil and Gas Exploration and Production	Canada	15,906.9 (2018)
Chariot Oil & Gas Limited	Morocco; Namibia	Oil and Gas Exploration and Production	Guernsey	N/A
Delonex Energy Limited	Chad; Ethiopia	Oil and Gas Exploration and Production	United Kingdom	N/A

Company/ Corporation	Countries of Operation	Industry	Headquarters	Total Revenue in Millions of USD (Year)
Discover Exploration Limited	Comoros; Kenya	Oil and Gas Exploration and Production	United Kingdom	N/A
Electricité de France S.A.	Egypt; Senegal	Oil and Gas Exploration and Production	France	76,006.6 (2018)
Energem Resources Inc.	Angola; South Africa	Oil and Gas Exploration and Production	South Africa	54.9 (2007)
Entreprise Tunisienne d'Activités Pétrolières	Algeria; Tunisia	Oil and Gas Exploration and Production	Tunisia	N/A
Equinor ASA	Angola; Tanzania	Oil and Gas Exploration and Production	Norway	78,556.0 (2018)
Gulfsands Petroleum plc	Morocco; Tunisia	Oil and Gas Exploration and Production	United Kingdom	5.622 (2012)
Hadi Bouchamaoui Sons International Ltd.	Egypt; Tunisia	Oil and Gas Exploration and Production	Tunisia	N/A
Hess Corporation	Egypt; Libya	Oil and Gas Exploration and Production	United States	6,152.0 (2018)
International Coal Ventures Private Limited	Mozambique; South Africa	Coal and Consumable Fuels	India	N/A
Intra Energy Corporation Limited	Malawi; Tanzania	Coal and Consumable Fuels	Australia	35.823 (2019)
Invictus Energy Limited	Botswana; South Africa	Oil and Gas Exploration and Production	Australia	N/A
Karoo Energy plc	Botswana; Zambia	Oil and Gas Exploration and Production	United Kingdom	0.114 (2014)
London Mining Plc	Cape Verde; South Africa	Coal and Consumable Fuels	United Kingdom	299.4 (2013)
Lone Pine Resources Inc.	Namibia; Zambia	Oil and Gas Exploration and Production	Canada	122.3 (2012)
MC Mining Limited	Madagascar; South Africa	Coal and Consumable Fuels	Australia	26.403 (2019)
Murphy Oil Corporation	Cameroon; Congo	Oil and Gas Exploration and Production	United States	2,586.6 (2018)
Noble Energy, Inc.	Cameroon; Equatorial Guinea	Oil and Gas Exploration and Production	United States	4,986.0 (2018)
OMV Aktiengesellschaft	Egypt; Tunisia	Oil and Gas Exploration and Production	Austria	25,268.3 (2018)
PA Resources AB (publ)	Congo; Tunisia	Oil and Gas Exploration and Production	Sweden	24.306 (2015)
Paladin Energy Limited	Malawi; Namibia	Coal and Consumable Fuels	Australia	21.491 (2019)
Panoro Energy ASA	Congo; Tunisia	Oil and Gas Exploration and Production	Norway	12.967
PT Pertamina (Persero)	Algeria; Gabon	Oil and Gas Exploration and Production	Indonesia	54,831.4 (2018)
Resource Generation Limited	Cameroon; South Africa	Coal and Consumable Fuels	South Africa	0.055 (2019)
Rio Tinto Group	Mauritius; Mozambique	Coal and Consumable Fuels	United Kingdom	40,522.0 (2018)
Sasol Limited	Botswana; South Africa	Oil and Gas Exploration and Production	South Africa	13,737.5 (2019)
Shaanxiyanchang Petroleum(Group) Co.,Ltd.	Central African Republic; Madagascar	Oil and Gas Exploration and Production	China	44,023.6 (2018)
Sound Energy plc	Mauritius; Morocco	Oil and Gas Exploration and Production	United Kingdom	0.914 (2016)
South Atlantic Petroleum Limited	Madagascar; Nigeria	Oil and Gas Exploration and Production	Nigeria	N/A
TransAtlantic Petroleum Ltd.	Egypt; Morocco	Oil and Gas Exploration and Production	United States	70.8 (2018)
Traxys S.A.	South Africa; Zimbabwe	Coal and Consumable Fuels	Luxembourg	3,401.1 (2007)
United Energy Group Limited	Egypt; Mauritius	Oil and Gas Exploration and Production	Hong Kong	674.6 (2018)
Wentworth Resources plc	Mozambique; Tanzania	Oil and Gas Exploration and Production	United Kingdom	16.224

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